BLM

U.S. Department of the Interior
Bureau of Land Management

Environmental Assessment

November 2015 Lease Sale
DOI-BLM-UT-G010-2015-089-EA
November 2015

PREPARING OFFICE

U.S. Department of the Interior
Bureau of Land Management

Environmental Assessment
November 2015 Lease Sale
DOI-BLM-UT-G010-2015-089-EA
November 2015

Prepared by
U.S. Department of the Interior
Bureau of Land Management

This page intentionally
left blank

Table of Contents

1. Introduction 1

1.1. Identifying Information: 1
1.1.1. Title, EA number, and type of project: 1
1.1.2. Location of Proposed Action: 1
1.1.3. Name and Location of Preparing Office: 1
1.2. Introduction: 1
1.3. Background 1
1.4. Purpose and Need 2
1.5. Conformance with BLM Land Use Plan 3
1.6. Relationship to Statues, Regulations, or Other Plans 4
1.7. Identification of Issues: 5
1.8. Summary 5

2. Proposed Action and Alternatives 7

2.1. Description of Alternatives Analyzed in Detail 9
2.2. Alternative A-Proposed Action 9
2.2.1. Well Pad and Road Construction 10
2.2.2. Drilling and Completion Operations 10
2.2.3. Production Operations 11
2.2.4. Interim Reclamation 12
2.2.5. Produced Water Handling 12
2.2.6. Maintenance Operations 12
2.2.7. Plugging and Abandonment 12
2.3. Alternative B – No Action 13

3. Affected Environment: 15

3.1. Resources/Issues Brought Forward for Analysis 17
3.1.1. Air Quality 17
3.1.1.1. Greenhouse Gas 19
3.1.2. Cultural 19
3.1.3. Designated Areas: Areas of Critical Environmental Concern 22
3.1.4. Lands with Wilderness Characteristics 22
3.1.4.1. Desolation Canyon Wilderness Character Inventory Unit 23
3.1.4.2. Hells Hole Wilderness Character Inventory Unit 23
3.1.4.3. Cripple Cowboy Wilderness Character Inventory Unit 23
3.1.5. Plants: BLM-Sensitive Plants 23
3.1.6. Livestock Grazing & Rangeland Health Standards 23
3.1.7. Recreation 24
3.1.7.1. Nine Mile - Special Recreation Management Area (SRMA) 24
3.1.8. Visual Resources 24
3.1.9. Wildlife: Migratory Birds including Raptors 25
3.1.9.1. Raptors 25
3.1.10. Wildlife: Non-USFWS Designated 26

3.1.10.1. Elk 26
3.1.10.2. Mule Deer 26
3.1.11. Wildlife: Threatened, Endangered, Proposed or Candidate 26

4. Environmental Effects: 29

4.1. Issues Carried Forward for Analysis 31
4.1.1. Alternative A – Proposed Action 31
4.1.1.1. Air Quality 31
4.1.1.2. Cultural 33
4.1.1.3. Designated Areas: Areas of Critical Environmental Concern 33
4.1.1.4. Lands with Wilderness Characteristics 34
4.1.1.5. Plants: BLM-sensitive Species 34
4.1.1.6. Livestock Grazing and Rangeland Health 35
4.1.1.7. Recreation 35
4.1.1.8. Visual Resources 36
4.1.1.9. Wildlife: Migratory Birds including Raptors 36
4.1.1.10. Wildlife: Non USFWS Designated 37
4.1.1.11. Wildlife: Threatened, Endangered, Proposed or Canidate 37
4.2. Alternative B – No Action 39
4.2.1. Air Quality 39
4.2.2. Cultural 39
4.2.3. Designated Area: Areas of Critical Environmental Concern 40
4.2.4. Lands with Wilderness Characteristics (LWC) 40
4.2.5. Plants: BLM-sensitive Species 40
4.2.6. Livestock Grazing and Rangeland Health 40
4.2.7. Recreation 40
4.2.8. Visual Resources 40
4.2.9. Wildlife: Migratory Birds 40
4.2.10. Wildlife: Non-USFWS Designated 40
4.2.11. Wildlife: Threatened, Endangered, Proposed or Candidate 40
4.3. Cumulative Impacts Analysis 41
4.3.1. Air Quality 41
4.3.1.1. Greenhouse Gas 43
4.3.2. Cultural 43
4.3.3. Designated Area: Areas of Critical Environmental Concern 43
4.3.4. Lands with Wilderness Characteristics (LWC) 44
4.3.4.1. Desolation Canyon Wilderness Character Inventory Unit (70,111 acres) 44
4.3.4.2. Hells Hole Wilderness Character Inventory Unit (5,247 acres) 44
4.3.4.3. Cripple Cowboy Wilderness Character Inventory Unit (13,603 acres) 45
4.3.5. Plants: BLM-sensitive Species 45
4.3.6. Livestock Grazing & Rangeland Health Standards 45
4.3.7. Recreation 45
4.3.8. Visual Resources 46
4.3.9. Wildlife: Migratory Birds Including Raptors 46
4.3.10. Wildlife: Non-USFWS Designated 47
4.3.11. Wildlife: Threatened, Endangered, Proposed or Candidate 47

5. Consultation and Coordination: 49

5.1. Scoping Comments 52
5.1.1. Utah Department of Natural Resources Utah Geological Survey 52
5.1.2. Utah Division of Wildlife Resources 52
5.2. Onsite Visits 53

6. List of Preparers 55

7. References 59

Appendix A. Preliminary Oil and Gas Lease Sale List 63

Appendix B. Maps 77

Appendix C. Interdisciplinary Checklist 85

Appendix D. Deferred Parcels and Parcel Sections 95

Appendix E. Public Comments and Responses 97

Appendix F. Parcel Pictures 103

This page intentionally
left blank

List of Figures

Figure F.1. Lease Parcel UT-1115-040 103
Figure F.2. Lease Parcel UT-1115-058 104
Figure F.3. Lease Parcel UT-1115-062 104
Figure F.4. Lease Parcel UT-1115-062 105
Figure F.5. Lease Parcel UT-1115-065 105
Figure F.6. Lease Parcel UT-1115-065 106
Figure F.7. Lease Parcel UT-1115-066 106
Figure F.8. Lease Parcel UT-1115-178 107
Figure F.9. Lease Parcel UT-1115-179 107
Figure F.10. Lease Parcel UT-1115-179 108
Figure F.11. Lease Parcel UT-1115–179 108
Figure F.12. Lease Parcel UT-1115-179 109
Figure F.13. Lease Parcel UT-1115-179 109
Figure F.14. Lease Parcel UT-1115-210 110
Figure F.15. Lease Parcel UT-1115-220 110
Figure F.16. Lease Parcel UT-1115-222 111

This page intentionally
left blank

List of Tables

Table 2.1. Surface Disturbance Assumptions 9
Table 3.1. Air Quality Regulatory Backgrounds for the Uinta Basin 17
Table 3.2. Threatened, Endangered, Proposed, Candidate, or BLM-sensitive Plants 23
Table 3.3. BLM Visual Resource Management (VRM) Class Objectives 24
Table 3.4. Lease Parcels ID and associated VRM Classes 25
Table 3.5. Threatened, Endangered, Candidate, or Sensitive Animal Potential Occurrence 27
Table 4.1. Anticipated Emissions [1](tons per year) 32
Table 4.2. General Wildlife Stipulations 37
Table 4.3. Threatened, Endangered, Candidate, or Sensitive Animal Potential Impacts 38
Table 4.4. Threatened, Endangered, Candidate, or Sensitive Animal Stipulations/Notices 39
Table 4.5. 44
Table 5.1. List of Persons, Agencies and Organizations Consulted 51
Table 6.1. List of Preparers 57
Table A.1. Preliminary Oil and Gas Lease Sale List 63
Table A.2. Utah Stipulations 67
Table A.3. Utah's Lease Notices 70
Table E.1. Public Comments and Responses 97

This page intentionally
left blank

Chapter 1. Introduction

This page intentionally
left blank

1.1. Identifying Information:

1.1.1. Title, EA number, and type of project:

November 2015 Oil and Gas Lease Sale

DOI-BLM-UT-G010-2015-0089-EA

1.1.2. Location of Proposed Action:

See Appendix A for legal descriptions of Leases and Appendix B for Maps

1.1.3. Name and Location of Preparing Office:

Vernal Field Office
170 South 500 East
Vernal, Utah 84078
Phone: (435) 781-4400
Fax: (435) 781-4410

1.2. Introduction:

The Bureau of Land Management (BLM) has prepared this environmental assessment (EA) to disclose and analyze the environmental consequences of the sale of 10 parcels during the November 2015 oil and gas lease sale and subsequent potential development. The EA is a site-specific analysis of potential impacts that could result from the implementation of a proposed action or alternatives to the proposed action. The EA assists the BLM in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any significant impacts could result from the analyzed actions. *Significance* is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of Finding of No Significant Impact (FONSI). A FONSI statement documents the reasons why implementation of the selected alternative would not result in significant environmental impacts (effects) beyond those already addressed in the Vernal Field Office Resource Management Plan (VFO RMP; BLM, 2008). If the decision maker determines that this project has significant impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record may be signed for the EA approving the selected alternative, whether the proposed action or another alternative.

1.3. Background

The parcels proposed for leasing were nominated by the public. Initially 32 Parcels were proposed for the 2015 lease sale. (Additional information is available on the oil and gas leasing webpage.)[1]Of those 32 preliminary parcels, 21 entire parcels and portions of 2 parcels were

[1]http://www.blm.gov/ut/st/en/prog/energy/oil_and_gas/oil_and_gas_lease.html

deferred from consideration for the November 2015 lease sale on account of issues related to greater sage-grouse habitat, white-tailed prairie dog habitat, yellow-billed cuckoo habitat, Lands with Wilderness Character, and the proposed Master Leasing Plan. These concerns have not been adequately analyzed under the Vernal RMP, or are undergoing additional analysis which would not be adequately addressed before the scheduled November 2015 lease sale.

The surface rights for most of the 10 parcels considered in the EA are owned by the federal government and administered by the VFO (see Appendix A, November 2015 Preliminary Oil and Gas Lease Sale List; and Appendix B, Maps of Parcels). The surface of approximately 3,142.91 acres are administered by the BLM. The surface of approximately 323.43 acres are privately owned. The mineral rights for 11 of the parcels proposed in this document are held by the United States Government. Parcels UT-1115-220 and UT-1115-222 have a 50% mineral interest with the United States Government. Appendix A provides the surface ownership, legal descriptions and acreages by the parcel identification number.

In general, the BLM Utah State Office (USO) conducts a quarterly competitive lease sale to sell available oil and gas lease parcels in the state. In the process of preparing a lease sale the BLM USO compiles a list of lands nominated and legally available for leasing, and sends a parcel list to the appropriate District Office where the parcels are located. District and Field Office staff then review and verify that the parcels are in areas available for leasing; any new information that has become available; assess any circumstances that have changed to determine what level of analysis is required; attach appropriate stipulations and notices; conduct appropriate consultations; complete site visits; and identify any special resource conditions for potential bidders. The Field Office then either determines that existing analyses provide an adequate basis for making a decision or that additional analysis is needed before making a leasing recommendation.

An EA is being used to determine the necessary administrative actions, stipulations, lease notices, special conditions, or restrictions that would be made a part of an actual lease at the time of issuance for this sale. The EA and unsigned FONSI are made available to the public for a 30-day public comment period on the BLM EPlanning Website.[2] The public comment period for this EA will occur from June 12th to July 13th. After analyzing and incorporating all substantive comments received during the public comment period, changes to the document and/or lease parcels list are made if necessary. The EA and unsigned FONSI are released again with an updated parcel list including applicable lease stipulations and notices through a Notice of Competitive Lease Sale (NCLS) which initiates a 30-day protest period.

1.4. Purpose and Need

The need for the sale is to respond to the public's lease nomination requests. Offering parcels for competitive oil and gas leasing provides for the orderly development of fluid mineral resources under BLM's jurisdiction in a manner consistent with multiple use management and environmental consideration for the resources that may be present. The purpose of the lease sale review process is to ensure that adequate provisions are included in the lease terms, notices and stipulations to protect public health and safety, ensure the project conforms with the land use plan, and ensure full compliance with the objectives of NEPA and other federal environmental laws and regulations designed to protect the environment, and comply with the BLM's multiple use management for public lands. The sale and development of oil and gas leases is needed to meet the energy needs of the United States public. The BLM is required by law to review areas that

[2]http://www.blm.gov/pgdata/content/wo/en/prog/planning/planning_overview/eplanning2.html

have been nominated for oil and gas leasing. Oil and gas leasing is a principal use of the public lands as identified in Section 102(a)(12), 103(1) of the Federal Land Policy and Management Act of 1976 (FLPMA), and it is conducted to meet requirements of the Mineral Leasing Act of 1920, as amended, the Mining and Minerals Policy Act of 1970, and the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (Reform Act). Leases would be issued pursuant to 43 CFR subpart 3100.

1.5. Conformance with BLM Land Use Plan

The Proposed Action and No Action alternatives described below are in conformance with VFO ROD RMP (BLM, 2008) because they are specifically provided for in the planning decision(s). More specifically, the proposed Action is in conformance with the following decisions form the VFO ROD/RMP

- The ROD for the VFO RMP/FEIS decisions MIN 6 – MIN 14 (pages 98-99) identifies those specific lands within the Vernal Field Office that are available for leasing as illustrated on its corresponding Oil and Gas Leasing map (Figure 8a).

- Appendices K (Surface Stipulations to all Surface Disturbing Activities), L (Utah's T&E and Special Status Species Lease Notices for Oil and Gas and BLM Committed Measures) and R (Fluid Mineral Best Management Practices) of the Vernal RMP/ROD contain pertinent stipulations, lease notices and committed measures.

It is also consistent with RMP decisions and their corresponding goals and objectives related to the management of (including but not limited to) air quality, cultural resources, recreation, riparian, soils, water, vegetation, fish & wildlife and Areas of Critical Environmental Concern (ACEC).

Standard lease terms provide for reasonable measures to minimize adverse impacts to specific resource values, land uses, or users (Standard Lease Terms are contained in Form 3100-11, Offer to Lease and Lease for Oil and Gas, U.S. Department of the Interior, BLM, October 2008 or later edition). Compliance with valid, nondiscretionary statutes (laws) is included in the standard lease terms. Nondiscretionary actions include the BLM's requirements under federal environmental protection laws, such as the Clean Water Act, Clean Air Act, Endangered Species Act, National Historic Preservation Act, and Federal Land Policy Management Act, which are applicable to all actions on federal lands.

Once the lease has been issued, the lessee has the right to use as much of the leased land as necessary to explore for, drill for, extract, remove, and dispose of oil and gas deposits located under the leased lands, subject to the standard lease terms and additional restrictions attached to the lease in the form of lease stipulations. Even if no restrictions are attached to the lease, the operations must be conducted in a manner that avoids unnecessary or undue degradation of the environment and minimizes adverse impacts to the land, air, water, cultural, biological, and visual elements of the environment, as well as other land uses or users. Also included in all leases are the two mandatory stipulations for the statutory protection of cultural resources (BLM Washington Office Instruction Memorandum No. 2005-03, Cultural Resources and Tribal Consultation for Fluid Minerals Leasing) and threatened or endangered species (BLM Washington Office Instruction Memorandum No. 2002-174, Endangered Species Act Section 7 Consultation), which are described in Sections 4.3.1.1 and 4.3.1.4, respectively. BLM would also encourage industry to consider participating in EPA's Natural Gas STAR program under all alternatives. The program is a flexible, voluntary partnership wherein EPA works with companies that produce, process,

transmit and distribute natural gas to identify and promote the implementation of cost-effective technologies and practices to reduce emissions of methane, a greenhouse gas.

1.6. Relationship to Statues, Regulations, or Other Plans

The proposed action is consistent with federal environmental laws and regulations, Executive Orders, and Department of Interior and the BLM policies and is in compliance, to the maximum extent possible, with state laws and local and county ordinances and plans, including the following:

- Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776, 43 U.S.C. 1761) and the regulations issued there under at 43 Code of Federal Regulations, part 2800.
- Taylor Grazing Act (1934), as amended
- Utah Standards and Guidelines for Rangeland Health (1997)
- BLM Utah Riparian Management Policy (2005)
- Section 106 of the National Historic Preservation Act of 1966, as amended and associated regulations at 36 CFR Part 800
- Bald and Golden Eagle Protection Act of 1962
- Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), as amended.
- BLM Manual 6840- Special Status Species Management
- Migratory Bird Treaty Act (1918)
- Utah Partners in Flight Avian Conservation Strategy Version 2.0.
- Birds of Conservation Concern 2002
- Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds
- MOU between the USDI BLM and USFWS to Promote the Conservation and Management of Migratory Birds (4/2010)
- Utah Supplemental Planning Guidance: Raptor Best Management Practices (BLM UTSO IM 2006-096)
- Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (U.S. Department of Interior, Bureau of Land Management, June 2007)
- Protection of Ground Water Associated with Oil and Gas Leasing, Exploration and Development (BLM UT IM 2010–055)
- Oil and Gas Leasing Reform —Land Use Planning and Lease Parcel Reviews (BLM WO IM 2010-117)

- Guidance for Management of Oil and Gas Exploration and Production Pits (BLM UT IB 2013–038)
- Oil and Gas Leasing Program NEPA Procedures Pursuant to Leasing Reform (BLM UT IM 2014-006)
- MOU Among the USDA, USDI and EPA Regarding Air Quality Analysis and Mitigation for Federal Oil and Gas Decisions Through the NEPA Process (2011)
- BLM Manual 6310 - Conducting Wilderness Characteristics Inventory of BLM Lands
- BLM Manual 6320 - Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process
- Greater Uinta Basin Oil and Gas Cumulative Impacts Technical Support Document (2012)
- Conservation Plan for Greater Sage-grouse in Utah February 14, 2013 FINAL
- Green River District Reclamation Guidelines IM-UT-G000–0002
- Vernal Field Office Surface Disturbance Weed Policy (IM-UT-G010-10-001).

The attached Interdisciplinary Team Checklist, Appendix C, was developed after consideration of these laws, ordinances, policies and plans.

1.7. Identification of Issues:

The proposed action was reviewed by an interdisciplinary team composed of resource specialists from the Vernal Field Office. This team identified resources in the parcel areas which might be affected and considered potential impacts using current office records, geographic information system (GIS) data, and site visits to the proposed lease parcels. On Feburary 3, 2015 letters or memorandum were sent,to the National Park Service, the United States Fish and Wildlife Service, the United States Forest Service and the State of Utah's Public Lands Policy Coordination Office, Division of Wildlife Resources (DWR) and the School and Institutional Trust Lands Administration to provide notice of the lease sale. The letters included parcel location descriptions and an invitation to attend the parcel site visits. The interdisciplinary team conducted site visits to validate existing data and gather new information in order to make an informed leasing recommendation on April 1st, 2nd, 8th, 9th, 15th, and 21st. The results of the interdisciplinary team review are contained in the Interdisciplinary Team Checklist, Appendix C.

1.8. Summary

This chapter has presented the purpose and need of the proposed project. In order to meet the purpose and need of the proposed project in a way that resolves potential issues, the BLM has considered and/or developed a range of action alternatives. These alternatives are presented in Chapter 2. The potential environmental impacts or consequences resulting from the implementation of each alternative considered in detail are analyzed in Chapter 4 for each of the identified issues.

This page intentionally
left blank

Chapter 2. Proposed Action and Alternatives

This page intentionally
left blank

2.1. Description of Alternatives Analyzed in Detail

This environmental assessment focuses on the Proposed Action and No Action alternatives. Other alternatives were not considered in detail because the issues identified during scoping did not indicate a need for additional alternatives or mitigation beyond those contained in the Proposed Action. The No Action alternative is considered and analyzed to provide a baseline for comparison of the impacts of the Proposed Action.

2.2. Alternative A-Proposed Action

Under Alternative A, ten parcels would be offered for lease at the November 2015 competitive Oil and Gas Lease Sale, to be held at the Utah BLM State Office. These parcels would be offered for lease subject to the applicable laws and regulations, the standard lease terms contained in BLM Form 3100-11 (Offer to Lease and Lease for Oil and Gas, October 2008), and the additional resource protection measures attached consistent with the VFO RMP (BLM, 2008). Legal descriptions of and stipulations and notices attached to each parcel can be found in Appendix A, and maps of the parcels can be found in Appendix B.

Leasing is an administrative action that affects economic conditions but does not directly cause environmental consequences. However, leasing is considered to be an irretrievable commitment of resources because the BLM generally cannot deny all surface use of a lease unless the lease is issued with a No Surface Occupancy stipulation. Potential oil and gas exploration and production activities, committed to in a lease sale, could impact resources and uses in the planning area. Direct, indirect or cumulative effects to resources and uses could result from as yet undetermined and uncertain future levels of lease exploration or development.

Although at this time it is unknown when, where, or if future well sites or roads might be proposed on any leased parcel, should a lease be issued site specific analysis of individual wells or roads would occur when a lease holder submits an APD (Application for Permit to Drill). The Reasonably Foreseeable Development (RFD) scenario serves as an analytical baseline for identifying and quantifying direct, indirect, and cumulative effects of oil and gas activity and forms the foundation for the analysis of the effects of oil and gas management decisions in planning and environmental documents. Table 2.1, “Surface Disturbance Assumptions” (p. 9) shows the disturbance estimates for this project should the leases be issued and proposed for development.

Table 2.1. Surface Disturbance Assumptions

Parcel Number	Number of Well Pads	Estimated Acres to be Disturbed
UT-1115-040	1	4
UT-1115-058	1	4
UT-1115-062	1	4
UT-1115-065	1	4
UT-1115-066	1	4
UT-1115-178	1	4
UT-1115-179	1	4
UT-1115-210	1	4
UT-1115-220	1	4
UT-1115-222	1	4
Total	**10**	**40**

2.2.1. Well Pad and Road Construction

Equipment for well pad construction would consist of dozers, scrapers, and graders. Topsoil from each well pad would be stripped to a maximum depth of six inches and stockpiled for future reclamation. Disturbance for each well pad would be estimated at an area of approximately 350 feet by 250 feet (~2 acres of land), including topsoil piles. For this analysis, it was assumed that disturbance for well pads could be as high as 4 acres per well to account for any infrastructure (e.g., roads) that would be required if the wells were to go into production (see below).

It is anticipated that new or upgraded access roads would be required to access well pads and maintain production facilities. Construction of new roads or upgrades to existing roads would require a 30-foot construction width and would be constructed of native material. Any new roads constructed for the purposes of oil and gas development would be utilized year-round for maintenance of the proposed wells and other facilities, and for the transportation of fluids and/or equipment, and would remain open to other land users. The type of equipment required for these activities would be the same as that needed for well pad construction. It is not possible to determine the distance of road that would be required because the location of the wells would not be known until the APD stage. However, for purposes of analysis it is assumed that disturbance from access roads would be approximately 1.8 acres of disturbance for each well pad (0.5 mile of road/well pad).

2.2.2. Drilling and Completion Operations

Once construction or expansion of an individual well pad is completed, drilling equipment would be moved onto the new well pad. It is assumed that wells would be drilled utilizing a conventional, mechanically-powered mobile drilling rig. The exact type and size of drilling rig would be dependent upon rig availability at the time of project implementation. Drilling operations would consist of drilling the hole, running and cementing intermediate casing, drilling the production hole, and running and cementing production casing. Water required for the drilling and completion of the proposed gas wells would be hauled by truck from a combination of the permitted water sources. It is estimated that approximately 3 acre-feet of water would be needed for the drilling and completion of one well. For the purposes of this document it is assumed that the water would be obtained from a fresh water source that would be depleting to the Colorado River System.

The casing and cementing program would be designed to isolate and protect the shallower formations, especially usable ground water, encountered in the well bore as directed by BLM Utah Instruction Memorandum 2010-055 and to prohibit pressure communication or fluid migration between zones. The cement would protect the well by preventing formation pressure from damaging the casing, and by retarding corrosion by minimizing contact between the casing and formation fluids. The type of casing used and the depth to which it is set would depend upon the physical characteristics of the formations that are drilled. Site-specific descriptions of drilling procedures would be included in the APD and the COAs for each well.

If testing indicates economic potential, completion operations would set production casing to the total drilled depth, perforate the casing in target production zones, and hydraulically fracture (fracing) the productive formation under high pressure. The fracing material would likely contain sand or other proppant material to keep the fractures open, thereby allowing hydrocarbons to flow more freely into the casing. The next phase would be to flow and test the well to determine rates of production.

2.2.3. Production Operations

If wells were to go into production, facilities would be located at the well pad and typically include a well head, a dehydrator/separator unit, and storage tanks for produced fluids. The production facility would typically consist of two storage tanks, a truck load-out, separator, and dehydrator facilities. Construction of the production facility would be located on the well pad and not result in any additional surface disturbance.

All permanent surface structures would be painted a flat, non-reflective color (e.g., juniper green, Carlsbad Canyon, Shadow Gray) specified by the BLM in order to blend with the colors of the surrounding natural environment. Facilities that are required to comply with the Occupational Safety and Health Act (OSHA) will be excluded from painting color requirements. All surface facilities would be painted immediately after installation and under the direction and approval of the BLM.

If oil is produced, the oil would be stored on location in tanks and transported by truck to a refinery. The volume of tanker truck traffic for oil production would be dependent upon production of the wells, however, it is estimated oil would be transported to a Salt Lake City refinery at least once a week, using 280-barrel tanker trucks.

If natural gas is produced, construction of a gas sales pipeline would be necessary to transport the gas. An additional Sundry Notice, right of way (ROW) and NEPA analysis would be completed, as needed, for any pipelines and/or other production facilities across public lands if not included in the original APD. BLM Best Management Practices(BMPs), such as burying the pipeline or installing the pipeline within the road, would be considered at the time of the proposal. For the purpose of this EA, it is assumed that 0.5 mile of pipeline would be installed within the 30-foot road width per well pad.

All operations would be conducted following the “Gold Book” Surface Operating Standards for Oil and Gas Exploration and Development. The Gold Book was developed to assist operators by providing information on the requirements for conducting environmentally responsible oil and gas operations on federal lands. The Gold Book provides operators with a combination of guidance and standards for ensuring compliance with agency policies and operating requirements, such as those found at 43 CFR 3000 and 36 CFR 228 Subpart E; Onshore Oil and Gas Orders (Onshore Orders); and Notices to Lessees. Included in the Gold Book are environmental BMPs; these measures are designed to provide for safe and efficient operations while minimizing undesirable impacts to the environment.

Periodically, a workover or recompletion on a well may be required to ensure that efficient production is maintained. Workovers can include repairs to the well bore equipment (casing, tubing, rods, or pump), the wellhead, or the production facilities. These repairs would usually be completed in 7 days per well, during daylight hours. The frequency for this type of work cannot be accurately projected because workovers vary by well; however, an average work time may be one workover per well per year after about 5 years of production. In the case of a recompletion, where the wellbore casing is worked on or valves and fittings are replaced to stimulate production, all byproducts would be stored in tanks and hauled from the location. For workover operations, it may be necessary to rework the surface location to accommodate equipment. At the completion of the work, the surface location would be re-graded and reclaimed to pre-existing conditions.

Exploration and development on split-estate lands is also addressed in the Gold Book, along with IM 2003-131, Permitting Oil and Gas on Split-Estate Lands and Guidance for Onshore Oil and Gas Order No. 1, and IM 2007-165, Split-Estate Report to Congress – Implementation of Fluid Mineral Leasing and Land Use Planning Recommendations. Proper planning and consultation, along with the proactive incorporation of these BMPs into the APD Surface Use Plan of Operations by the operator, will typically result in a more efficient APD and environmental review process, increased operating efficiency, reduced long-term operating costs, reduced final reclamation needs, and less impact to the environment.

2.2.4. Interim Reclamation

All fluids in the reserve pit would be allowed to dry prior to reclamation work. After fluids have evaporated from the reserve pit, sub-soil would be backfilled and compacted within 90 days. If the fluids within the reserve pit have not evaporated within 90 days (weather permitting or within one evaporation cycle i.e. one summer), the fluid would be pumped from the pit and disposed of in accordance with Utah Guidance for Management of Oil and Gas Exploration and Production Pits (IB No. UT 2013–038). Portions of the well pad not needed for production of the proposed well, including the reserve pit, would be recontoured, and topsoil would be replaced, scarified, and seeded. The 30-foot road construction width would be reclaimed to an 18-foot wide crowned running surface plus drainage ditches. The topsoil would be spread over the interim reclamation area, seeded, left in place for the life of the well, and then used during the final reclamation process. Reclaimed land would be seeded with a mixture (certified weed free) and rate as recommended or required by the BLM.

2.2.5. Produced Water Handling

Water is often associated with either produced oil or natural gas. Water is separated out of the production stream and can be temporarily stored in the reserve pit for 90 days. Permanent disposal options include discharge to evaporation pits or underground injection. Handling of produced water is addressed in Onshore Oil and Gas Order No. 7.

2.2.6. Maintenance Operations

Traffic volumes during production would be dependent upon whether the wells produced natural gas and/or oil, and for the latter, the volume of oil and/or water produced.

Well maintenance operations may include periodic use of work-over rigs and heavy trucks for hauling equipment to the producing well, and would include inspections of the well by a pumper on a regular basis or by remote sensing. The road and the well pad would be maintained for reasonable access and working conditions.

2.2.7. Plugging and Abandonment

If the well does not produce economic quantities of oil or gas, or when it is no longer commercially productive, the well would be plugged and abandoned. The well would be plugged and abandoned following procedures approved by a BLM Petroleum Engineer, which would include requiring cement plugs at strategic positions in the well bore. All well pads would be reclaimed according to the standards established in the Green River District Reclamation Guidelines.

2.3. Alternative B – No Action

Under the No Action alternative none of the nominated parcels would be offered for sale.

This page intentionally
left blank

Chapter 3. Affected Environment:

This page intentionally
left blank

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) of the impact area as identified in the Interdisciplinary Team Checklist found in Appendix C. This chapter provides the baseline for comparison of impacts/consequences described in Chapter 4. Only those aspects of the affected environment that are potentially impacted are described in detail (see Appendix C).

3.1. Resources/Issues Brought Forward for Analysis

3.1.1. Air Quality

The Project Area is located in the Uinta Basin, a semiarid, mid-continental climate regime typified by dry, windy conditions, limited precipitation and wide seasonal temperature variations subject to abundant sunshine and rapid nighttime cooling. The Uinta Basin is designated as unclassified/attainment by the EPA under the Clean Air Act. This classification indicates that the concentration of criteria pollutants in the ambient air is below National Ambient Air Quality Standards (NAAQS), or that adequate air monitoring is not available to determine attainment.

NAAQS are standards that have been set for the purpose of protecting human health and welfare with an adequate margin of safety. Pollutants for which standards have been set include ground level ozone, (O_3), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), and particulate matter less than 10 microns in diameter (PM_{10}) or 2.5 microns in diameter ($PM_{2.5}$). Airborne particulate matter consists of tiny coarse-mode (PM_{10}) or fine-mode ($PM_{2.5}$) particles or aerosols combined with dust, dirt, smoke, and liquid droplets. $PM_{2.5}$is derived primarily from the incomplete combustion of fuel sources and secondarily formed aerosols, whereas PM_{10} is primarily from crushing, grinding, or abrasion of surfaces. Table 3.1, "Air Quality Regulatory Backgrounds for the Uinta Basin" (p. 17) lists ambient air quality background values for the Uinta Basin and NAAQS standards.

Table 3.1. Air Quality Regulatory Backgrounds for the Uinta Basin

Pollutant	Averaging Period(s)	Uinta Basin Background Concentration ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
SO_2	Annual 24-hour 3-hour 1–hour	0.8[2] 3.9[2] 10.1[2] 19.0[2]	--[1] --[1] 1,300 197
NO_2	Annual 1–hour	17 8.1[3] 60.2[3]	100 188
PM_{10}	Annual 24-hour	7.0[4] 16.0[4]	--[6] 150
$PM_{2.5}$	Annual 24-hour	9.4[3] 17.8[3]	15 35
CO CO	8-hour 1-hour	3,450[4] 6,325[4]	10,000 40,000

Pollutant	Averaging Period(s)	Uinta Basin Background Concentration ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
O_3	8-hour	100.0[3,5]	75
1 – The 24-hour and annual SO_2 NAAQS have been revoked by USEPA. 2 – Based on 2009 data from Wamsutter Monitoring Station Data (USEPA AQS Database). 3 – Based on 2010/2011 data from Redwash Monitoring Station (USEPA AQS Database). 4 – Based on 2006 data disclosed in the Greater Natural Buttes FEIS. (BLM, 2012). 5 – Ozone is measured in parts per billion (ppb) 6 – The annual PM_{10} NAAQS has been revoked by USEPA.			

Existing point and area sources of air pollution within the Uinta Basin include the following:

- Exhaust emissions (primarily CO, NO_x, $PM_{2.5}$, and HAPs) from existing natural gas fired compressor engines used in transportation of natural gas in pipelines;
- Natural gas dehydrator still-vent emissions of CO, NO_x, $PM_{2.5}$, and HAPs;
- Gasoline and diesel-fueled vehicle tailpipe emissions of VOCs, NO_x, CO, SO_2, PM_{10}, and $PM_{2.5}$;
- Oxides of sulfur (SO_x), NO_x, fugitive dust emissions from coal-fired power plants, and coal mining/ processing;
- Fugitive dust (in the form of PM_{10} and $PM_{2.5}$) from vehicle traffic on unpaved roads, wind erosion in areas of soil disturbance, and road sanding during winter months; and,
- Long-range transport of pollutants from distant sources.

Two year-round air quality monitoring sites were established in summer 2009 near Red Wash (southeast of Vernal, Utah) and Ouray (southwest of Vernal). These monitors were certified as Federal Reference Monitors in fall of 2011, which means they can be used to make a NAAQS compliance determination. The complete EPA Ouray and Redwash monitoring data can be found at: http://www.epa.gov/airexplorer/index.htm

Both monitoring sites have recorded numerous exceedences of the 8-hour ozone standard during the winter months (January through March 2010, 2011, 2013, and 2014). It is thought that high concentrations of ozone are being formed under a “cold pool” process. This process occurs when stagnate air conditions form with very low mixing heights under clear skies, with snow-covered ground, and abundant sunlight. These conditions, combined with area precursor emissions (NO_x and VOCs), can create intense episodes of ozone. The high numbers did not occur in January through March 2012 due to a lack of snow cover. This phenomenon has also been observed in similar locations in Wyoming. Winter ozone formation is a newly recognized issue, and the methods of analyzing and managing this problem are still being developed. Existing photochemical models are currently unable to reliably replicate winter ozone formation. This is due to the very low mixing heights associated with unique meteorology of the ambient conditions. Further research is needed to definitively identify ozone precursor sources that contribute to observed ozone concentrations.

The UDAQ conducted limited monitoring of $PM_{2.5}$ in Vernal, Utah in December 2006. During the 2006-2007 winter seasons, $PM_{2.5}$ levels were higher than the $PM_{2.5}$ health standards that became effective in December 2006. The $PM_{2.5}$ levels recorded in Vernal were similar to other areas in northern Utah that experience wintertime inversions. The most likely causes of elevated $PM_{2.5}$ at the Vernal monitoring station are those common to other areas of the western U.S. (combustion

and dust) plus nitrates and organics from oil and gas activities in the Basin. $PM_{2.5}$ monitoring that has been conducted in the vicinity of oil and gas operations in the Uinta Basin by the Red Wash and Ouray monitors beginning in summer 2009 have not recorded any exceedences of either the 24 hour or annual NAAQS.

HAPs are pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental impacts. The EPA has classified 187 air pollutants as HAPs. Examples of listed HAPs associated with the oil and gas industry include formaldehyde, benzene, toluene, ethylbenzene, isomers of xylene (BTEX) compounds, and normal-hexane (n-hexane). There are no applicable Federal or State of Utah ambient air quality standards for assessing potential HAP impacts to human health.

3.1.1.1. Greenhouse Gas

Greenhouse gases keep the planet's surface warmer than it otherwise would be. According to NOAA and NASA data, the Earth's average surface temperature has increased by about 1.2 to 1.4º F in the last 100 years. The eight warmest years on record (since 1850) have all occurred since 1998, with the warmest year being 1998.

The analysis of the Regional Climate Impacts prepared by the U.S. Global Change Research Program (USGCRP) in 2009 suggests that recent warming in the region (including the project area) was nationally among the most rapid. Past records and future projections predict an overall increase in regional temperatures, largely in the form of warmer nights and effectively higher average daily minimum temperatures. They conclude that this warming is causing a decline in spring snowpack and reduced flows in the Colorado River. The USGCRP projects a region-wide decrease in precipitation, although with substantial variability in interannual conditions. For eastern Utah, the projections range from an approximate 5 percent decrease in annual precipitation to decreases as high as 40 percent of annual precipitation.

Equilibrium climate sensitivity quantifies the response of the climate system to constant radiative forcing on multicentury time scales. It is defined as the change in global mean surface temperature at equilibrium that is caused by a doubling of the atmospheric CO_2concentration. Equilibrium climate sensitivity is likely in the range 1.5°C to 4.5°C (high confidence), extremely unlikely less than 1°C (high confidence), and very unlikely greater than 6°C (medium confidence). The lower temperature limit of the assessed likely range is thus less than the 2°C in the AR4, but the upper limit is the same. This assessment reflects improved understanding, the extended temperature record in the atmosphere and ocean, and new estimates of radiative forcing. No best estimate for equilibrium climate sensitivity can now be given because of a lack of agreement on values across assessed lines of evidence and studies (IPCC, 2013).

3.1.2. Cultural

The National Historic Preservation Act (NHPA), as amended in 1992 (16 USC 40 et. seq.), requires government agencies to take into account the effects of their actions on properties listed or eligible for listing on the National Register of Historic Places (NRHP). Cultural resources are defined as any evidence of past human activities and can include structures such as historic or prehistoric buildings, canals and rock art. Cultural resources also include places that are important to a particular group’s history and traditions. These places are often called Traditional Cultural Properties (TCPs). These types of properties can be an archaeological site or a non-archaeological

site such as lakes and springs, land features and traditional gathering or collection areas (16 U.S.C. 470, Section 101[d][6][a]).

Cultural resources are sensitive, irreplaceable resources with potential public and scientific uses and an important and integral part of our national heritage. Cultural resources constitute "a definite location of human activity, occupation, or use identifiable through field inventories (i.e., surveys), historical documentation, or oral evidence" (BLM-M-8100). The term cultural resource also includes "archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (i.e., sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and utilizing for public benefit. They may be but are not necessarily eligible for the National Register" (BLM-8100).

All available cultural resource information was reviewed and analyzed for the Area of Potential Effect (APE), which is defined as the entire parcel being offered for the November 2015 Oil and Gas lease sale. Portions of the parcels have been inventoried. Un-inventoried portions were compared with similar areas where inventories had been conducted. This analysis included an assessment of nearby surveys, sites, topography, vegetation and water resources.

A brief summary and analysis of inventories within the parcels follows, which illustrates how this determination was made. There are a total of eleven parcels being offered in this inventory and each is identified using the BLM Sale ID number as the parcel number.

Parcel UT-1115-040 is located in T9S, R19E, Section 13; Ouray, UT; 1:24,000 topographic maps; Uintah County, Utah. There are a total of 360.00 acres in this parcel.

A Class I inventory revealed that approximately 10% of the parcel has been surveyed. There are five known sites in the parcel boundary: two rock art sites, a burial, wickiup and a lithic scatter. Additionally, there are a several known sites in the vicinity. The vegetation in the area is primarily desert shrub and the parcel is located immediately east of the Green River. Based on the proximity to the Green River and the surrounding site density, the potential for new sites is high.

Parcel UT-1115-058 is located in T16S, R21E, Section 34; Tenmile Canyon South, UT; 1:24,000 topographic maps; Grand County, Utah. There are a total of 120.00 acres in this parcel.

A Class I inventory revealed that approximately 5% of the parcel has been surveyed. There are two known sites in the parcel boundary: a multicomponent lithic and historic trash scatter and a lithic scatter. Additionally, there are limited surveys and sites in the surrounding vicinity. The vegetation is a mixed pinyon juniper and mountain shrub with one area of the parcel located in a valley bottom while the other contains more topographical relief. The nearest water is about one mile away. Based on the surrounding site density and topography, the potential for new sites is moderate.

Parcel UT-1115-062 is located in T15S, R23E, Sections 33, 34; Cedar Camp Canyon, UT and PR Spring, UT; 1:24,000 topographic maps; Grand County, Utah. There are a total of 220.82 acres in this parcel.

A Class I inventory revealed that this parcel has never been inventoried and there are no known sites in the parcel boundary. There are limited surveys and sites in the surrounding vicinity. The vegetation is a mixed pinyon juniper, Ponderosa pine and sagebrush/grass habitat. Most of the

parcel is located in in a valley bottom with the nearest water located about one mile away. Based on the surrounding site density and topography, the potential for new sites is low.

A Class I inventory revealed that this parcel has never been inventoried and there are no known sites in the parcel boundary. There are limited surveys and sites in the surrounding vicinity. The vegetation in the area is a mixture of pinyon juniper and sagebrush/grass habitat. The parcel is located near a permanent water source; however, the terrain is steep. The lack of surveys, the low surrounding site density, the steep topography and other environmental factors demonstrate that the potential for new sites is low.

Parcel UT-1115-065 is located in T15S, R25E, Sections 25, 26, 35; Jim Canyon, UT; 1:24,000 topographic maps; Grand County, Utah. There are a total of 320.00 acres in this parcel.

A Class I inventory revealed that approximately 5% of the parcel has been surveyed. There are no known sites in the parcel boundary. Additionally, there have been few surveys conducted in the vicinity of the parcel with one known site in the area. The vegetation in the area is primarily a sagebrush/grass habitat. The parcel is not located near a permanent water source and the terrain is steep. Based on the surrounding surveys, site density and steep topography, the potential for new sites is low.

Parcel UT-1115-066 is located in T15S, R25E, Section 35; Jim Canyon, UT and San Arroyo Ridge, UT; 1:24,000 topographic maps; Grand County, Utah. There are a total of 480.64 acres in this parcel.

A Class I inventory revealed that approximately 5% of the parcel has been surveyed. There are no known sites in the parcel boundary and only one site is known in the area. The vegetation in the area is primarily a sagebrush/grass habitat. The parcel is close to a permanent water source; however, the terrain is steep. Based on the surrounding surveys, site density and steep topography, the potential for new sites is low.

A Class I inventory revealed that approximately 5% of the parcel has been surveyed. There is one known site located in the parcel, a canal, and there are more canals nearby. The area has been turned into agricultural fields and the parcel is located a mile south of the Cobble Hollow Reservoir. Based on the proximity to the Cobble Hollow Reservoir and the surrounding site density, the potential for new sites is low.

Parcel UT-1115-178 is located in T11S, R10E, Sections 8-11; Matts Summit, UT and Gray Head Peak, UT; 1:24,000 topographic maps; Duchesne County, Utah. There are a total of 329.79 acres in this parcel.

A Class I inventory revealed that approximately 90% of the parcel has been surveyed. There are no known sites in the parcel boundary and only one site is known in the vicinity. The vegetation in the area is a mixture of conifer and pinyon juniper. The parcel is close to Mud Springs; however, the terrain is very steep. Based on the surrounding surveys, site density and steep topography, the potential for new sites is low.

Parcel UT-1115-179 is located in T11S, R10E, Sections 20, 29-31, 33; Matts Summit, UT; 1:24,000 topographic maps; Duchesne County, Utah. There are a total of 800.00 acres in this parcel.

A Class I inventory revealed that approximately 3% of the parcel has been surveyed. There are no known sites in the parcel boundary; however, there are a few known sites in the vicinity. The

vegetation in the area is a mixture of conifer and pinyon juniper and the parcel is close to a permanent water source. Moreover, the terrain is conducive to archaeological sites. Based on the surrounding surveys, site density, proximity to a permanent water source and the terrain, the potential for new sites is high.

Parcel UT-1115-210 is located in T11S, R15E, Sections 28, 33; Cowboy Bench, UT; 1:24,000 topographic maps; Duchesne County, Utah. There are a total of 531.89 acres in this parcel.

Parcel UT-1115-220 is located in T2S, R2W, Section 31; Bluebell, UT; 1:24,000 topographic maps; Duchesne County, Utah. There are a total of 160.00 acres in this parcel.

A Class I inventory revealed that approximately 3% of the parcel has been surveyed. There are no known sites located with the parcel; however, there are canals in the vicinity. The area has been turned into agricultural fields and the parcel is more than five miles from the Cobble Hollow Reservoir. Based on the surrounding site density and distance from water, the potential for new sites is low.

Parcel UT-1115-222 is located in T2S, R3W, Section 28; Bluebell, UT; 1:24,000 topographic maps; Duchesne County, Utah. There are a total of 70.00 acres in this parcel.

A Class I inventory revealed that approximately 30% of the parcel has been surveyed. There are twenty-two known sites in the parcel boundary and this parcel leads to Nine Mile Canyon, an area of high site density. The vegetation in the area is a mixture of sagebrush/grass habitat and pinyon juniper. The parcel is close to a permanent water source and the terrain is conducive to multiple archaeological sites. Based on the surrounding surveys, site density, and proximity to a permanent water source and Nine Mile Canyon, the potential for new sites is extremely high.

3.1.3. Designated Areas: Areas of Critical Environmental Concern

Parcel UTU-1115-210 is located within the Nine Mile ACEC. Areas of Critical Environmental Concern (ACECs) are special management areas designated by BLM to protect significant historic, cultural, or scenic values; fish and wildlife resources; natural process or systems; and/or natural hazards that have more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. ACECs have qualities or circumstances that make them fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change. They have been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of Federal Land Management and Practices Act (FLMPA) and have qualities which warrant highlighting in order to satisfy public or management concerns about safety and public welfare.

3.1.4. Lands with Wilderness Characteristics

Non-WSA Lands with Wilderness Characteristics (LWC) are areas having at least 5,000 acres in a natural or undisturbed condition, and provide outstanding opportunities for solitude and/or primitive forms of recreation. This information is documented wilderness characteristics review completed by the Vernal FO.

3.1.4.1. Desolation Canyon Wilderness Character Inventory Unit

Portions of Parcel UT-1115-B-8203-210 occur within the boundary of Desolation Canyon Wilderness Character Inventory Unit. This unit has 70,111 acres.

3.1.4.2. Hells Hole Wilderness Character Inventory Unit

Portions of Parcel UT-1115-065 occur within the boundary of Hells Hole Wilderness Character Inventory Unit. This unit has 5,247 acres.

3.1.4.3. Cripple Cowboy Wilderness Character Inventory Unit

Portions of Parcel UT-1115-066 occur within the boundary of Cripple Cowboy Wilderness Character Inventory Unit. This unit has 13,603 acres.

3.1.5. Plants: BLM-Sensitive Plants

After a review of the parcels using BLM GIS data, it has been determined that the threatened, endangered, candidate, proposed, and BLM-sensitive plant species listed in Table 3.2, "Threatened, Endangered, Proposed, Candidate, or BLM-sensitive Plants" (p. 23) occur within the Project Area or have the potential to be affected by the Proposed Action.

Table 3.2. Threatened, Endangered, Proposed, Candidate, or BLM-sensitive Plants

Species	Status	Potential Occurrence and Habitat Type	Parcels
Sterile yucca (*Yucca sterilis*)	BLM-sensitive	Known occurrences of the species are found growing in sandy soils. However, this species is new to the UT BLM sensitive plant species list and as such has not been extensively surveyed for nor is the range and exact habitat requirements fully understood. Therefore, at this time, any sandy soils within the proposed project area have to be assumed to be potential habitat for the species.	all parcels

3.1.6. Livestock Grazing & Rangeland Health Standards

The following specific parcels were determined to have possible effects to Livestock Grazing and Rangeland Health Standards.

Parcel Number	Allotment Name	Improvements in the parcels
UT-1115-040	Green River AMP	None
UT-1115-058	Mcclelland	None
UT-1115-062	Book Cliff	None
UT-1115-065	Hells Hole	None
UT-1115-066	Sweet Water	None
UT-1115-178	West Fork	None
UT-1115-179	West Fork	None
UT-1115-210	Water Canyon #2	None

The allotments the parcels are within range from desert salt shrub, sage steppe to forested lands. Numerous areas consist of small to large ephemeral drainages, and some border the Green River. Elevation ranges from around 5,000 feet to upwards of 7,000 feet in elevation. Most areas are

located within the 5–8 inch annual precipitation zone, some areas receive more precipitation. Soils are generally desert sand loam, gravelly sandy loam, and semi-desert shallow loams with scattered areas of clays, sands, and badland type sand stone and rock outcrops. Most allotments have had Rangeland Health Assessments done during the last five years. Numerous allotments affected by the proposed lease sale have grazing permits processed through site-specific NEPA documents which analyze the current and on-going oil and gas activities. The remaining two parcels are on private land which do not have an associated BLM grazing allotment.

3.1.7. Recreation

The BLM's basic units of recreation management are the Special Recreation Management Area (SRMA) and the Extensive Recreation Management Area (ERMA). A SRMA is an area where recreation is emphasized. Within an ERMA, recreation is generally unstructured and dispersed, minimal recreation-related investments are required, and there are minimal regulatory constraints. ERMAs generally cover all areas that are not designated as SRMAs. Popular recreational destinations in the project area include the Nine Mile SRMA.

Parcel UT-1115-066 is within one half mile of an inventoried recreation site (a primitive camping site including a fire ring).

3.1.7.1. Nine Mile - Special Recreation Management Area (SRMA)

Parcel UT-1115-210 is located within the Nine Mile SRMA. Visitors to this area engage in an array of recreation activities that include backpacking, camping, dirt biking, enjoying natural and cultural features, four wheel driving, hiking, horseback riding , hunting , mountain biking, OHVing, rock climbing, and scenic driving, among others. The Nine Mile SRMA is managed to protect high-value cultural values and scenic quality.

3.1.8. Visual Resources

The BLM uses a Visual Resource Management (VRM) system to inventory and manage visual resources on public lands. The primary objective of VRM is to manage visual resources so that the quality of scenic (visual) values is protected. The VRM system uses four classes (and their associated visual resource objectives) to describe the different degrees of surface disturbance or modification allowed on the landscape (see Table 3.3, "BLM Visual Resource Management (VRM) Class Objectives" (p. 24))

Table 3.3. BLM Visual Resource Management (VRM) Class Objectives

VRM Class	VRM Objective
Class I	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and should not attract attention.
Class II	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
Class IV	The objective of this class is to provide for management activities, which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements of the landscape.

The proposed lease parcels would encompass several different VRM management classes as listed inTable 3.4, "Lease Parcels ID and associated VRM Classes" (p. 25). The remaining two parcels are on private land which do not have an associated VRM Class.

Table 3.4. Lease Parcels ID and associated VRM Classes

VRM Class	Parcel ID
Class I	None
Class II	UT-1115-058, UT-1115-065 and UT-1115-066
Class III	UT-1115-040, UT-1115-062, UT-1115-178, UT-1115-179, and UT-1115-210
Class IV	None

3.1.9. Wildlife: Migratory Birds including Raptors

All of the lease parcels contain nesting and foraging habitat for migratory birds. The Migratory Bird Treaty Act of 1918 protects migratory birds and their parts. Executive Order 13186, signed on January 10, 2001, directs federal agencies to evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern. Birds of Conservation Concern (USFWS 2002) identify the migratory bird species of concern in different Bird Conservation Regions (BCRs) in the United States. The parcels are within BCR 16 (Southern Rockies/Colorado Plateau). Species lists for BCR16 have been reviewed and the potential exists for several migratory bird species, currently designated as species of concern, to nest within the parcels, primarily between April and September. Additional discussion is contained in Table 3.5, "Threatened, Endangered, Candidate, or Sensitive Animal Potential Occurrence" (p. 27).

3.1.9.1. Raptors

Raptors, including the red-tailed hawk, Cooper's hawk, sharp-shinned hawk, American kestrel, northern harrier, great horned owl, and other less common species utilize each of the habitat types within the lease parcels and may be present year round or seasonally. Nesting tends to be concentrated around cliffs, large trees, embankments, and other habitat features. Raptor management is guided by BLM's Best Management Practices for Raptors and Their Associated Habitats in Utah (2006). These are best management practices which are BLM-specific recommendations for implementation of the U.S. Fish and Wildlife Service, Utah Field Office's "Guidelines for Raptor Protection from Human and Land Use Disturbances" (Guidelines). The Guidelines were originally developed by the Fish and Wildlife Service in 1999, and were updated in 2002 based on recent court rulings, policy decisions, and Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds. The Guidelines were provided to BLM and other land-managing agencies to provide raptor management consistency while ensuring project compatibility with the ecological requirements of raptors. The best management practices

include timing limitations and controlled surface measures to protect raptor species. Table 3.5, "Threatened, Endangered, Candidate, or Sensitive Animal Potential Occurrence" (p. 27) identifies sensitive raptor species potential occurrence and habitat within the parcels.

3.1.10. Wildlife: Non-USFWS Designated

3.1.10.1. Elk

Parcels UT-1115-058, UT-1115-062, UT-1115-065, UT-1115-066, and UT-1115-179 are in rocky mountain elk crucial wintering and calving habitat. Elk occur year-round in the project area in low numbers. Crucial habitat provides shelter and forage for elk during critical times of the year. Resident elk use the low-elevation water resources, such as the Green River.

3.1.10.2. Mule Deer

Parcels UT-1115-058, UT-1115-062, UT-1115-065, UT-1115-066, UT-1115-074, UT-1115-178, UT-1115-179, and UT-1115-210 are within crucial winter and fawning range for mule deer. Crucial range provides unique habitat for deer. The function of crucial winter range is to provide shelter and forage to big game, ensuring their survival during periods of significant winter and fawning stress. Mule deer populations in the western U.S. have historically fluctuated due to environmental factors (e.g., drought, severe winters). Deer populations in eastern Utah have declined in recent years. Unusually high deer mortalities in the 1980s and 1990s are primarily attributed to the severe, 1983-1984 and 1992-1993 winters, and to a prolonged, seven-year drought between 1986 and 1992. These conditions decimated the fawn population as well as a large percentage of the adult deer. A very slow recovery of the deer population has occurred since that time. Fawn production and survival, which continued to be low through 1996, began to improve after 1996 with good forage and winter conditions. The current drought is causing severe stress to mule deer, once again reducing their populations and limiting the forage on which they depend. However, these are environmental factors that are beyond human control. Factors within human control that affect the population of mule deer in the area include hunting, grazing, energy development, increased recreation, and predation.

3.1.11. Wildlife: Threatened, Endangered, Proposed or Candidate

BLM manages sensitive species in accordance with BLM Manual 6840 with the objective to initiate proactive conservation measures that reduce or eliminate threats to these species to minimize the likelihood of and need for listing of these species under the ESA. Special status species are, collectively, the federally listed or proposed and Bureau sensitive species, which include both Federal candidate species and delisted species within 5 years of delisting. There are 57 BLM Utah sensitive species, including 12 species under conservation agreement and 4 candidate species. Of these, 52 species occur or potentially occur within the VFO. The Utah sensitive species lists also includes federally listed species. VFO has used available data sources to determine if the parcels fall within known habitat for BLM or UDWR sensitive species. After site-specific review, it has been determined that the threatened, endangered, candidate and sensitive species listed in Table 3.5, "Threatened, Endangered, Candidate, or Sensitive Animal Potential Occurrence" (p. 27) may occur within the project area or be affected by the proposed action.

Table 3.5. Threatened, Endangered, Candidate, or Sensitive Animal Potential Occurrence

Species	Status	Potential Occurrence and Habitat Type	Parcels
Fish			
Bonytail Chub, Colorado Pikeminnow, Humpback Chub, Razorback Sucker	Endangered	These species occur in the Green River. Habitat is not present within the proposed project area; however, water depletion is anticipated to occur.	All parcels
Bluehead Sucker, Flannelmouth Sucker, Roundtail Chub	Conservation Agreement Species	These species occur in the Green River. Habitat is not present within the proposed project area; however, water depletion is anticipated to occur.	All parcels
Mammals			
Townsend's Big-Eared Bat, Big Free-Tailed Bat, Spotted Bat, Fringed Myotis, Allens Big Eared Bat, Western Red Bat	BLM Sensitive	These species potentially occur throughout Utah; however, no occurrence records exist for the extreme northern or western parts of the state. Known occurrences have been reported in northeastern Uintah County. Habitat is present within the proposed project area.	All parcels
Raptors			
Golden Eagle	BLM Sensitive, Bird of Conservation Concern	Throughout the summer, golden eagles are found in mountainous areas, canyons, shrub-land and grassland. During the winter they inhabit shrub-steppe vegetation, as well as wetlands, river systems and estuaries. Golden eagles are quite common to Uintah County. All parcels contain foraging habitat however no known nests exist within them.	All parcels
Bald Eagle	BLM Sensitive, Bird of Conservation Concern	Throughout the winter, bald eagles are typically found near rivers, lakes, and marshes where unfrozen, open waters offer the opportunity to prey on fish and waterfowl. The Colorado and Green River corridors are well used by Utah's wintering bald eagles. The eagles begin to arrive in November.	UT-1115-040

Species	Status	Potential Occurrence and Habitat Type	Parcels
Mexican Spotted Owl	Threatened	In Utah, found primarily in rocky canyons. Nests in caves or crevices. Roosts on ledges or in trees in canyons. The species prefers mesic (moister/cooler) canyons with mixed conifer or riparian components.	UT-1115-058, UT-1115-062, UT-1115-065, UT-1115-066, and UT-1115-210
Ferruginous Hawk	BLM Sensitive, Bird of Conservation Concern	This species is known to occur in the West Desert and the Uinta Basin as a summer resident and a common migrant. Within the Uinta Basin, the species is more associated with prairie dog colonies as the main prey base. These parcels contain foraging habitat; however no known or documented ferruginous hawk nests are within ½ mile of the proposed project.	UT-1115-040
Short-eared Owl	Wildlife Species of Concern	Inhabits arid grasslands, agricultural areas, marshes, and occasionally open woodlands. In Utah, cold desert shrub and sagebrush-rabbit brush habitats also are utilized.	All parcels
Migratory Birds			
Gray Vireo	Bird of Conservation Concern	Dry shrubby areas, chaparral, and sparse woodlands. Habitat is present within the proposed project area.	All parcels
Grasshopper Sparrow	Bird of Conservation Concern	In Utah, the species is widespread and has been known to breed in Uintah, Duchesne, and Daggett counties. Habitat is present within the proposed project area.	All parcels
Bobolink	Wildlife Species of Concern	Short grass prairies, alpine meadows, riparian woodlands, and reservoir habitats.	All parcels
Brewer's Sparrow	Bird of Conservation Concern	Desert and shrubland/ chaparral. Habitat is present within the proposed project area.	All parcels

Chapter 4. Environmental Effects:

This page intentionally
left blank

This chapter discusses the environmental consequences of implementing the alternatives described in Chapter 2. Under NEPA, actions with the potential to affect the quality of the human environment must be disclosed and analyzed in terms of direct and indirect effects—whether beneficial or adverse and short or long term—as well as cumulative effects. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by an action but occur later or farther away from the resource. Beneficial effects are those that involve a positive change in the condition or appearance of a resource or a change that moves the resource toward a desired condition. Adverse effects involve a change that moves the resource away from a desired condition or detracts from its appearance or condition. Cumulative effects are the effects on the environment that result from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions.

The No Action alternative (offer none of the nominated parcels for sale), serves as a baseline against which to evaluate the environmental consequences of the Proposed Action alternative (offer of eleven parcels for sale with additional resource protective measures). For each alternative, the environmental effects are analyzed for the resources that were carried forward for analysis in Chapter 3.

4.1. Issues Carried Forward for Analysis

4.1.1. Alternative A – Proposed Action

This section analyzes the impacts of the proposed action to those potentially impacted resources described in the Affected Environment (Chapter 3).

4.1.1.1. Air Quality

The act of leasing would not result in changes to air quality. However, should the leases be issued, development of those leases could impact air quality conditions. It is not possible to accurately estimate potential air quality impacts by computer modeling from the project due to the variation in emission control technologies as well as construction, drilling, and production technologies applicable to oil versus gas production and utilized by various operators, so this discussion will remain qualitative.

However, due to the deterioration of air quality in the region being primarily focused on the oil and gas community, reductions from PM and ozone precursor emissions will mean reductions in GHG's. Any oil and gas that is potentially leased, will be subject to strict mitigation practices and must conform to our lease notice for design types, and enhanced mitigation from BLM and UDAQ.

Should development on issued leases be proposed, and prior to authorizing specific proposed projects on the subject lease parcels, emission inventories will need to be developed, and possibly near field modeling will need to be conducted, to adequately analyze direct and indirect potential air quality impacts. Air quality dispersion modeling, which may also be required, includes cumulative impact analysis for demonstrating compliance with the NAAQS, plus analysis of impacts to Air Quality Related Values (i.e. deposition, visibility), particularly as they might affect nearby Class 1 areas (National parks and Wilderness areas). Such proposed development would be a minor air pollution source under the Clean Air Act. At present, control technology on some emissions sources (e.g. drill rigs) is not required by regulatory agencies. Possible future

development would result in different emission sources associated with two project phases: well development and well production. Annual estimated emissions from development of a single well are summarized in Table 4.1, "Anticipated Emissions [1](tons per year)" (p. 32).

Table 4.1. Anticipated Emissions [1](tons per year)

Pollutant	Development	Production	Total
NO_x	14.2	2.2	16.4
CO	3.2	3.2	6.4
SO_x	0.9	0	0.9
PM_{10}	0.7	0.03	0.73
$PM_{2.5}$	0.3	0.01	0.31
VOC	2.5	6.5	9.0
Benzene	0.03	0.13	0.16
Toluene	0.02	0.09	0.11
Ethylbenzene	0.02	0.22	0.24
Xylene	0	0.07	0.07
n-Hexane	0.05	0.08	0.13
Formaldehyde	0	0	0
[1] Emissions include one producing well and associated operations traffic during the year in which the project is developed			

Well development includes NO_x, SO_2, and CO tailpipe emissions from earth-moving equipment, vehicle traffic, drilling, and completion activities. Fugitive dust concentrations would occur from vehicle traffic on unpaved roads and from wind erosion where soils are disturbed. Drill rig and fracturing engine operations would result mainly in $NO_x$and CO emissions, with lesser amounts of SO_2. These emissions would be short-term during the drilling and completion phases.

During well production, continuous NO_x, CO, VOC, and HAP emissions would originate from well pad separators, condensate storage tank vents, and daily tailpipe and fugitive dust emissions from operations traffic. Road dust ($PM_{10}$and $PM_{2.5}$) would also be produced by vehicles servicing the wells.

Emissions of NO_x and VOC, ozone precursors, for a single well are estimated to be 16.4 tons/yr for NO_x, and 9.0 tons/yr of VOC (Table 4.1, "Anticipated Emissions [1](tons per year)" (p. 32)) per well. Emissions would be dispersed and/ or diluted to the extent where any local ozone impacts from the Proposed Action would be indistinguishable from background conditions.

The primary sources of HAPs are from oil storage tanks and smaller amounts from other production equipment. Small amounts of HAPs are emitted by construction equipment. These emissions are estimated to be minor and less than one ton per year.

Application of Stipulations UT-S-01 and Notice UT-LN-96 to each of the parcels on federal surface would be adequate for the leasing stage to disclose potential future restrictions and to facilitate the reduction of potential impacts upon receipt of a site specific APD.

4.1.1.1.1. Greenhouse Gas

The assessment of greenhouse gas emissions and climate change remains in its earliest stages of formulation. Applicable EPA rules do not require any controls and have yet to establish any emission limits related to GHG emissions or impacts. The lack of scientific models that predict climate change on regional or local level prohibits the quantification of potential future impacts

of decisions made at the local level, particularly for small scale projects such potential drilling that may occur as a result of the proposed leasing. Drilling and development activities as a result of the proposed leasing are anticipated to release a negligible amount of greenhouse gases into the local air-shed.

4.1.1.2. Cultural

Cultural resources on the nominated parcels would not be directly impacted by the issuance of leases. However, the issuance of leases does convey an expectation that drilling and development could occur. Indirect impacts to cultural resources could result from future lease actions, such as exploration or operational activities.

There are a total of eleven parcels under consideration for the November 2015 Oil and Gas Lease Sale. Of these, six are located more than a mile from a permanent water source while five are located within one mile of a permanent water source. Seven parcels have a low potential for new archaeological sites, one parcel has a moderate potential and two parcels have a high potential.

Lease UT-1115-210 has an extremely high potential due to its proximity to Nine Mile Canyon. It was analyzed using the assumption of one well pad being placed on the parcel. The portions of the parcel that are on BLM land have a stipulation of no surface occupancy. However, the privately held lands will only have the standard stipulations attached.

Each issued parcel would contain a mandatory stipulation for the statutory protection of cultural resources which would be enforced through any future authorization to conduct exploration or operational activities under the lease. Potential impacts relating to future authorizations would be mitigated through avoidance whenever possible. Due to the expected site type and site density, reasonable development could occur on these parcels without effect to historic properties. To assure appropriate consideration of future effects from the lease sale, the BLM would add the lease notices UT-LN-67 and UT-LN-68 to all parcels offered for lease. In addition, the BLM would add the lease notices UT-LN-69 and UT-LN-70 to parcels UT-1115-040, UT-1115-058, UT-1115-179, and UT-1115-210. These notices would be adequate for the leasing stage to disclose potential restrictions against future authorizations.

4.1.1.3. Designated Areas: Areas of Critical Environmental Concern

4.1.1.3.1. Nine Mile Canyon ACEC

The issuance of leases would not directly impact the ACEC's relevant and important values. However, as the BLM generally cannot deny all surface use of a lease unless the lease is issued as a No Surface Occupancy stipulation, the issuance of leases does convey an expectation that drilling and development would occur. No surface occupancy and controlled surface use stipulation UT-S-23 would be applied within the ACEC and mitigate impacts of that oil and gas development on other resource values. Per the Vernal RMP, no surface occupancy applies below the upper rim of the Canyon. Areas above the upper rim are subject to standard stipulations.

The Nine Mile Canyon ACEC was carried forward in the Vernal RMP to enhance cultural and special status plant species while enhancing scenic vistas, recreation, and wildlife resource values. The relevant and important values are cultural resources, special status species, and high quality scenery. For a detailed explanation of impacts to other resources please refer to Chapter 3 and Appendix C of this document. The R&I value of scenery only applies within the Nine Mile

Canyon itself and is protected by VRM Class II objectives from canyon rim to canyon rim within the river corridor. Because scenic R&I values are not attributed to areas above the rim, the Approved Resource Management Plan states on page 41 that, "there is no need to restrict oil and gas leasing for visual purpose" above the canyon rim. BLM would add the lease stipulation UT-S-23 - No Surface Occupancy/Controlled Surface Use to parcel 210 which would be adequate for the leasing stage to disclose potential restrictions against future authorizations.

4.1.1.4. Lands with Wilderness Characteristics

Although the issuance of the lease would not directly impact the wilderness characteristics of the area, the potential drilling and development for oil and gas that may occur following lease issuance could impact wilderness character. In the event that drilling and development were to occur in areas of the parcels possessing wilderness characteristics, wilderness characteristics in that area would be lost. Impacts could include loss of naturalness and loss of opportunities for solitude or primitive unconfined recreation. Additional impacts could include loss of size that may occur from development should the proposed development segregate portions of the wilderness characteristics less than 5,000 acres from the main body a of wilderness characteristics area. These potential impact to wilderness characteristics as a result of oil and gas development were anticipated in the Vernal RMP which it states on page 33 and 34 that some areas were not selected to be BLM Natural Areas and therefore were not selected to be managed for the purpose of preserving wilderness values because they possess high potential for oil and gas resources and large portions of the land were already under lease for oil and gas development. Where development occurs, wilderness characteristics would be lost.

4.1.1.5. Plants: BLM-sensitive Species

The issuance of leases would not directly impact threatened, endangered, candidate, proposed, or BLM-sensitive plant species on the nominated parcels. However, as the BLM generally cannot deny all surface use of a lease unless the lease is issued as a No Surface Occupancy stipulation, the issuance of leases does convey an expectation that drilling and development would occur. Chapter 3 identifies species that could be impacted through future actions on leased parcels. Beyond the potential loss or damage to individuals these impacts include direct dispersed and indirect impacts including: the loss of suitable habitat for the species and it's pollinators; increased competition for space, light, and nutrients with invasive and noxious weed species introduced and spread due to the Proposed Action; accidental spray or drift of herbicides used during invasive plant control; altered photosynthesis, respiration, and transpiration due to increased fugitive dust resulting from the surface disturbance and project related traffic. For the parcels on federally managed surface, application of the appropriate species-specific lease notices and application of lease notices UT-LN-49 (Utah sensitive species) and UT-LN-49 (Special Status Plants) would be adequate for the leasing stage to disclose potential restrictions against future authorizations.

> "The following Endangered Species Act (ESA) related stipulation (in accordance with WO IM - 2002-174) would be applied to all parcels:"The lease may now and hereafter contain plants, animals, and their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objectives to avoid BLM approved activity that will contribute to a need to list such a species or their habitat. BLM may require modification to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a

proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it completes its obligation under requirements of the Endangered Species Act as amended, 16 U. S. C. § 1531 *et seq.* including completion of any required procedure for conference or consultation."

4.1.1.6. Livestock Grazing and Rangeland Health

Under the proposed action for the lease sale, livestock grazing would continue; however, should development occur on the lealse, loss of forage and possible reductions of AUMs would occur in the allotments due to disturbance and activity. Livestock movement patterns would be hindered by new roads and oil well pads. Increased traffic may lead to an increase in vehicle livestock collisions, and increasing mortality rates. Invasive weeds would be expected to increase along new roads and throughout well pads; past reclamation efforts have not been successful in eradication of invasive species or in obtaining the seral state of ecological site descriptions for those areas before disturbance occurred. Topsoil erosion would occur which would increase sediment loading within riparian areas and decrease viable soils for plant communities. Channelization would occur along roads.

Rangeland Health Assessments have been taken on these allotments in key areas for years. Some of these key areas could be lost due to disturbance from oil and gas development activity. Data will be and has been lost due to surface disturbance. New areas will have to be targeted as key areas for these allotments. Mitigation may need to take place on a site specific basis where Range Improvement Projects (RIPs) exist. This should include a 200 meter buffer from all RIPs. Depending on amount of disturbance, compensatory adjustments may be needed if AUMs are reduced on livestock operations. Compensatory adjustments would be looked at on a case by case basis at the Environmental Assessment level for the allotments' permit renewal process.

4.1.1.7. Recreation

The issuance of lease parcel UT–1115-210 would not directly impact the Nine Mile SRMA. However, as the BLM generally cannot deny all surface use of a lease unless the lease is issued with a No Surface Occupancy stipulation, the issuance of leases does convey an expectation that drilling and development would occur.

Should construction and drilling occur, the sights and sounds associated with the development of the oil and gas related activities would be apparent to visitors participating in recreation related activities. The noise of construction and operation of producing wells, including the presence of work crews, vehicles, and equipment, would reduce primitive recreational opportunities in proximity to development. Impacts from light and sound would be minimized by implementing the RMP management decisions (MIN-5) that state, "The BLM will seek to minimize light and sound pollution within the VPA by using the best available technology such as installation of multi-cylinder pumps, hospital sound-reducing mufflers, and placement of exhaust systems to direct noise away from noise sensitive areas." The noise sensitive area would be the Nine Mile Canyon itself. The following lease stipulations and notices would be adequate for the leasing stage to disclose potential restrictions against future development of parcel UTU-115-210: UT-S-23 - No Surface Occupancy/Controlled Surface Use and UT-LN-106 (Special Recreation Management Area).

Parcel UT–1115–066 is within 1/2 mile of an inventoried campground, Grand Valley Overlook. No surface disturbance is anticipated to occur to the campground because it is outside of the parcel area. However, should construction and drilling occur on the parcel, the sights and sounds associated with the development of the oil and gas related activities would be apparent to recreators using the campground. The noise of construction and operation of producing wells, including the presence of work crews, vehicles, and equipment, would reduce primitive recreational opportunities in proximity to development. Impacts from light and sound would be minimized by implementing the RMP management decisions (MIN-5) that state, "The BLM will seek to minimize light and sound pollution within the VPA by using the best available technology such as installation of multi-cylinder pumps, hospital sound-reducing mufflers, and placement of exhaust systems to direct noise away from noise sensitive areas." The noise sensitive area would be the campground.

4.1.1.8. Visual Resources

The issuance of leases would not directly impact Visual Resources. However, as the BLM generally cannot deny all surface use of a lease unless the lease is issued as a No Surface Occupancy stipulation, the issuance of leases does convey an expectation that drilling and development would occur.

For the purposes of this analysis, impacts to visual resources would be considered relevant if the impacts of the proposed project do not conform to an area's designated visual resource management (VRM) class objectives. Short-term impacts are those that would affect visual resources for fewer than five years; long-term impacts would affect visual resources for more than five years. The potential direct adverse impacts to visual resources would include the visual contrasts created by construction equipment, pipelines, well pads, temporary and permanent access roads, and other forms of infrastructure associated with oil and gas exploration and development. In general, drilling rigs and equipment, construction and maintenance vehicles, development infrastructure, and surface disturbance, including roads, would impact an area's scenic quality and appearance of naturalness with human-made form, color, and linear contrasts. A visual contrast rating process will be used for the VRM analysis, which involves comparing the project features with the major features in the existing landscape to determine whether the Scenic Values of the BLM managed lands within each parcel have been maintained. The following lease stipulations would be adequate for the leasing stage to disclose potential restrictions against future development of parcels UTU-115-058, UTU-115-065, and UTU-115-066: UT-S-157 (NSO Visual Resources) and UT-S-159 (VRM II).

4.1.1.9. Wildlife: Migratory Birds including Raptors

The issuance of leases would not directly impact migratory birds and raptors on the nominated parcels. However, the issuance of leases does convey an expectation that construction and drilling could occur. Chapter 3 identifies that migratory birds and raptors occur on all parcels and could be potentially impacted through future actions on leased parcels. In addition to the direct loss and fragmentation of habitat, noise disturbances from increased traffic levels could temporarily displace migratory birds and raptors. However, the Lease Stipulation UT-S-261 and Lease Notice UT-LN-45 would mitigate/minimize these impacts. Modifications to a surface plan of operation would be addressed at the APD stage. Bird and raptor surveys would be conducted and utilized prior to any surface disturbing activity.

Application of the migratory bird and raptor lease notices would be adequate for the leasing stage to disclose potential restrictions to reduce potential impacts. Appropriate lease stipulations and notices have been included within the Proposed Action to protect habitat values (see Appendix A). Project-specific impacts relating to future authorizations cannot be analyzed until an exploration or development application is received.

4.1.1.10. Wildlife: Non USFWS Designated

The issuance of leases would not directly impact fish and wildlife resources on the nominated parcels. Chapter 3 identifies species and habitats which could be potentially impacted through future actions on leased parcels. Project-specific impacts relating to future authorizations cannot be analyzed until an exploration or development application is received, however for both general fish and wildlife, impacts are assumed to include the direct loss and fragmentation of habitat upon construction of a well pad with its associated road and pipeline. In addition, noise disturbances from increased traffic levels could temporarily displace wildlife species.

Appropriate lease stipulations and notices have been included to protect big game habitat values (see Table 4.2, "General Wildlife Stipulations" (p. 37)).

Table 4.2. General Wildlife Stipulations

Species	Stipulations	Parcels
Crucial elk calving	UT-S-247 TL-Crucial Deer Fawning & Elk Calving Habitat	UT-1115-058, UT-1115-062, UT-1115-065, UT-1115-066, and UT-1115-179
Crucial elk winter	UT-S-230 TL-Crucial Deer and Elk Winter Range	UT-1115-179
Crucial deer fawning	UT-S-247 TL-Crucial Deer Fawning & Elk Calving Habitat	UT-1115-058, UT-1115-062,UT-1115-065, UT-1115-066, UT-1115-074, UT-1115-178, UT-1115-179, and UT-1115-210

4.1.1.11. Wildlife: Threatened, Endangered, Proposed or Canidate

The issuance of leases would not directly impact threatened, endangered, candidate, or sensitive animal species or habitat. However, the issuance of leases does convey an expectation that construction and drilling could occur. Chapter 3 identifies species and habitats which could be potentially impacted through future actions on leased parcels. Project-specific impacts relating to future authorizations cannot be analyzed until an exploration or development application is received, however it is assumed to include the direct loss and fragmentation of habitat upon construction of a well pad with its associated road and pipeline. In addition to the direct loss and fragmentation of habitat associated with the Proposed Action, noise disturbances from increased traffic levels, or water depletion (for fish) could temporarily displace wildlife species. Refer to Table 4.3, "Threatened, Endangered, Candidate, or Sensitive Animal Potential Impacts" (p. 38) for a brief summary of anticipated impacts should development occur.

Table 4.3. Threatened, Endangered, Candidate, or Sensitive Animal Potential Impacts

Species	Potential Impacts
Bonytail Chub, Colorado Pikeminnow, Humpback Chub, Razorback Sucker, Bluehead Sucker, Flannelmouth Sucker, & Roundtail Chub	All parcels have potential for drilling activities to use water from the Green River system. Water depletions reduce the ability of the river to create and maintain the primary constituent elements that define critical habitats. Food supply, predation, and competition are important elements of the biological environment. Food supply is a function of nutrient supply and productivity, which could be limited by reduction of high spring flows brought about by water depletions. Predation and competition from nonnative fish species have been identified as factors in the decline of the endangered fishes.
Townsend's Big-Eared Bat, Big Free-Tailed Bat, Spotted Bat, Fringed Myotis, Allens Big Eared Bat, & Western Red Bat	Construction of roads and well pads could result in the loss of foraging habitat, making it less suitable for bats. As traffic volumes and/or project-related activities increase, adjacent habitats may be avoided due to human presence, noise, and the potential influx of invasive weeds.
Golden Eagle, Bald Eagle, Burrowing Owl, Ferruginous Hawk, & Short-eared Owl	Potential effects of the Proposed Action on raptor species include: 1) increased indirect impacts (including poaching and collisions with vehicles), 2) direct loss or degradation of potential nesting and foraging habitats from construction and drilling, and 3) indirect disturbance from human activity (including harassment, displacement, and noise).
Gray Vireo, Grasshopper Sparrow, Brewer's Sparrow, &Bobolink	The proposed action would result in a loss of habitat for migratory birds. Direct impacts to nesting and breeding migratory birds may occur, depending upon the time of construction and drilling. If development occurs in the spring, during the nesting season for most migratory birds, impacts would be greater than if development occurred between late summer and late winter. Impacts to birds during the spring could include nest abandonment, reproductive failure, displacement, and destruction of nests.
Mexican Spotted Owl	Potential impacts include increased human presence; equipment and vehicle use; and surface disturbance in owl habitat. Associated visual and noise disturbance may adversely affect the behavior of owl during breeding, nesting, roosting, or foraging efforts.

The following Endangered Species Act (ESA) related stipulation (in accordance with WO IM - 2002-174) would be applied to all parcels:
The lease may now and hereafter contain plants, animals, and their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objectives to avoid BLM approved activity that will contribute to a need to list such a species or their habitat. BLM may require modification to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it completes its obligation under requirements of the Endangered Species Act as amended, 16 U. S. C. § 1531 *et seq*. including completion of any required procedure for conference or consultation.

Table 4.4, "Threatened, Endangered, Candidate, or Sensitive Animal Stipulations/ Notices" (p. 39) lists all additional lease notices and stipulations that would also be applied to the indicated parcels.

Table 4.4. Threatened, Endangered, Candidate, or Sensitive Animal Stipulations/Notices

Species	Lease Notice or Stipulations	Parcels
Bonytail Chub, Colorado Pikeminnow, Humpback Chub, & Razorback Sucker	T&E-03 Endangered Fish of the Upper Colorado River Drainage Basin UT-LN-49 Utah Sensitive Species	All
Bluehead Sucker, Flannelmouth Sucker, Roundtail Chub	UT-LN-49 Utah Sensitive Species	All
Townsend's Big-Eared Bat, Big Free-Tailed Bat, Spotted Bat, Fringed Myotis, Allens Big Eared Bat, & Western Red Bat	UT-LN-49 Utah Sensitive Species	All
Mexican Spotted Owl	T&E-06 NSO/CSU/TL Mexican Spotted Owl	UT-1115-058, UT-1115-062, UT-1115-065, UT-1115-066, and UT-1115-210
Golden Eagle and Bald Eagle	UT-S-278 CSU-Bald Eagle Winter Roost	UT-1115-040
Golden Eagle and Bald Eagle	UT-S-261 NSO/CSU/TL-Raptor Buffer UT-LN-49 Utah Sensitive Species UT-LN-40 Golden Eagle Habitat UT-LN-49 Bald Eagle Habitat	All
Ferruginous Hawk	UT-S-261 NSO/CSU/TL-Raptor Buffer UT-LN-49 Utah Sensitive Species	UT-1115-040
Short-eared owl	UT-S-261 NSO/CSU/TL-Raptor Buffer UT-LN-49 Utah Sensitive Species	All
Gray Vireo, Grasshopper Sparrow, Brewer's Sparrow, Bobolink	UT-LN-45 Migratory Birds UT-LN-49 Utah Sensitive Species	All

Application of these stipulations and notices to each of the parcels on federal surface would be adequate for the leasing stage to disclose potential future restrictions and to facilitate the reduction of potential impacts upon receipt of a site specific APD.

4.2. Alternative B – No Action

4.2.1. Air Quality

The No Action alternative would not result in potential impacts because the parcels would not be leased or developed.

4.2.2. Cultural

The No Action alternative would not result in potential impacts because the parcels would not be leased or developed.

4.2.3. Designated Area: Areas of Critical Environmental Concern

The No Action alternative would not result in potential impacts because the parcels would not be leased or developed

4.2.4. Lands with Wilderness Characteristics (LWC)

The No Action alternative would not result in potential impacts because the parcels would not be leased or developed.

4.2.5. Plants: BLM-sensitive Species

The No Action alternative would not result in potential impacts because the parcels would not be leased or developed.

4.2.6. Livestock Grazing and Rangeland Health

The No Action alternative would not result in potential impacts because the parcels would not be leased or developed.

4.2.7. Recreation

The No Action alternative would not result in potential impacts because the parcels would not be leased or developed.

4.2.8. Visual Resources

The No Action alternative would not result in potential impacts because the parcels would not be leased or developed.

4.2.9. Wildlife: Migratory Birds

The No Action alternative would not result in potential impacts because the parcels would not be leased or developed

4.2.10. Wildlife: Non-USFWS Designated

The No Action alternative would not result in potential impacts because the parcels would not be leased or developed.

4.2.11. Wildlife: Threatened, Endangered, Proposed or Candidate

The No Action alternative would not result in potential impacts because the parcels would not be leased or developed.

4.3. Cumulative Impacts Analysis

A cumulative impact is defined in CEQ regulations (40 CFR §1508.7) as "the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions." Cumulative impacts can result from individually minor but collectively major actions taking place over a period of time. The cumulative impact area varies by resource.

Past, present, and reasonably foreseeable impacts may occur from a variety of activities. Dispersed recreation activities, such as sightseeing, biking, camping, and hunting, have occurred and are likely to continue to occur within the nominated parcels; these activities likely result in negligible impacts to resources because of their dispersed nature. Other land use activities, such as livestock grazing, vegetation projects, oil and gas development, and wildland fire, have also occurred within the nominated parcels and are likely to occur in the future. These types of activities are likely to have a greater impact on resources in the project area because of their more concentrated nature.

4.3.1. Air Quality

The cumulative impact area for air quality is the Uinta Basin, plus all regional Class I areas and other environmentally sensitive areas (e.g., national parks and monuments, wilderness areas, etc.) near the Uinta Basin. The Air Resource Management Strategy (ARMS) Modeling Project is a cumulative assessment of potential future air quality impacts associated with predicted oil and gas activity in the Uinta Basin (BLM, 2011). Consequently, past, present and reasonably foreseeable wells in the Uinta Basin are a part of the cumulative actions considered in this analysis. The ARMS is incorporated by reference and summarized below.

The ARMS Modeling Project predicted the following impacts to air quality and air quality related values for the 2010 typical year and four 2021 future year scenarios: 2021 on-the-books (OTB); 2021 Scenario 1 (NO_xcontrols); 2021 Scenario 2 (VOC controls); and 2021 Scenario 3 (NO_x and VOC controls).

- Ozone
    - The highest modeled ozone occurs in the Uinta Basin study area regardless of model scenario, and all scenarios predict exceedences of the ozone NAAQS and state AAQS in the Uinta Basin.
    - In the Uinta Basin, the ozone concentrations are highest during the winter period. In Class I and Class II areas outside the Uinta Basin study area, ozone concentrations are highest during the summer period.
    - During non-winter months in the Uinta Basin the model predicts that ozone may exceed the NAAQS and state AAQS (Ambient Air Quality Standards); however, model-adjusted results from the MATS tool (which accounts for model performance biases) indicate that non-winter ozone concentrations are below the NAAQS and state AAQS for all monitors and areas analyzed. Also, the 2021 scenarios have minimal effect on model-predicted ozone concentrations during non-winter months.

- 2021 Scenario 2 tends to have the lowest 8-hour ozone concentration relative to all other 2021 scenarios (4th highest daily maximum is 3 ppb lower compared to the 2021 OTB Scenario). When comparing Scenario 2 to the OTB Scenario, a potential reduction in ozone concentrations occurs in the vicinity of the Ouray site (where the concentrations are already largest). There is no predicted ozone disbenefit associated with Scenario 2 mitigation measures (i.e., there is no area with predicted ozone increases relative to the OTB Scenario). This supports the assessment that peak ozone impacts are in VOC-limited areas.
- 2021 Scenarios 1 and 3 are predicted to have higher ozone impacts than either the 2010 Typical year and the 2021 OTB Scenario. Both scenarios predict a relatively large increase in ozone concentrations within the vicinity of Ouray indicating potential ozone disbenefits associated with NO_x control mitigation measures.

- NO_2, CO, SO_2, $PM_{2.5}$, and PM_{10}
  - There are seven monitoring stations within the 4- km domain with daily $PM_{2.5}$ concentrations that exceed the NAAQS and state AAQS in the baseline emissions inventory.
  - All modeled NO_2, CO, SO_2, $PM_{2.5}$, and PM_{10} values are well below the NAAQS and state AAQS in the Uinta Basin.
  - The model-predicted $PM_{2.5}$ and PM_{10} concentrations may underestimate future impacts due to a negative model bias throughout the year in the 4-km domain with the largest bias occurring in summer (AECOM and STI 2014).
  - Results from the MATS tool (which accounts for model performance biases) indicate that $PM_{2.5}$ concentrations may exceed the NAAQS and state AAQS for select monitors and assessment areas in the 2010 Typical year. All 2021 scenarios predict that only one of these monitoring station would continue to exceed the NAAQS and state AAQS.
  - No monitoring stations within the 4-km domain exceed the annual $PM_{2.5}$ NAAQS and state AAQS during the 2010 typical or 2021 Scenarios.
  - Two unmonitored areas within the Uinta Basin exceed the annual $PM_{2.5}$ NAAQS and state AAQS during the 2010 typical year, and impacts in these areas tend to increase under 2021 Scenarios 1 and 2. Under 2021 Scenario 3, the annual PM_2 impacts decrease in the Uinta Basin due to combustion control measures.
  - The 2021 scenarios generally have lower NO_2, CO, SO_2, $PM_{2.5}$, and PM_{10} concentrations than the 2010 Typical Year scenario, except for within the Uinta Basin.
  - Under the 2021 scenarios, all assessment areas are within the PSD (Prevention of Significant Deterioration) increments for annual NO_2, 3-hour SO_2, annual SO_2, and annual PM_{10}.
  - Under the 2021 scenarios, most assessment areas exceed the 24-hour $PM_{2.5}$ PSD increment.
- Visibility
  - Visibility conditions in Class I and sensitive Class II areas generally show improvement in the 2021 Scenarios relative to the 2010 Typical Year.
  - There also are no substantial differences in the 20th percentile best and worst visibility days between the 2021 Scenarios.

- Deposition and Acid Neutralizing Capacity
    - Results generally show a decrease in deposition for the 2021 Scenarios relative to the 2010 Typical Year.
    - The differences in estimated deposition between the 2021 Scenarios are generally very small.
    - Acid Neutralizing Capacity change at all seven sensitive lakes exceeds the 10 percent limit of acceptable change for all model scenarios.

It is anticipated that the impact to ambient air quality and air quality related values associated with the Proposed Action would be indistinguishable from and dwarfed by the model and emission inventory scope and margin of error. The No Action alternative would not result in an accumulation of impacts.

4.3.1.1. Greenhouse Gas

It is not currently possible to determine a climate change impact from project specific GHG emissions, nor is it possible to assign a significance value to project specific GHG emissions. GHG emissions will be reported per guidance established by CEQ and the Interagency Air Quality MOU (USDA/USDOI, 2011). Drilling and development activities, should the parcels be leased, are anticipated to release a negligible amount of greenhouse gases into the local airshed, resulting in a negligible cumulative impact. The No Action Alternative would not result in an accumulation of impacts.

4.3.2. Cultural

The cumulative impact area for this resources is the parcel boundaries. Past, present, and reasonably foreseeable activities within the parcels that could have potential cumulative impacts on cultural resources include increased motorized access into previously inaccessible areas. Cumulative impacts include dust accumulation and its impact on rock art, changes in visitation, inadvertent or advertent (i.e., vandalism) damage to cultural resources, impacts to identified and unidentified Traditional Cultural Properties and increased recreational use.

Surface disturbance resulting from mineral exploration and development including road, pipeline and electric line construction could potentially cause the greatest amount of cumulative effects to cultural resources in the parcels. These activities have the potential to increase visual, noise, atmospheric and other such intrusions that affect the cultural setting and viewshed of historic properties, both of which may contribute to their National Register of Historic Places eligibility. The proposed action adds the potential for development to occur in these areas. The no action alternative would not result in an accumulation of impacts.

4.3.3. Designated Area: Areas of Critical Environmental Concern

The cumulative impact area for the Nine Mile Canyon ACEC (44,168 Acres) is the boundary of that area. The rationale for this boundary is that special management considerations are placed on the ACEC to protect the relevant and important (R&I) values. The R&I values of the Nine Mile Canyon ACEC are the cultural resources, high quality scenery, and special status species. The past, present, and foreseeable future actions with the potential to contribute to surface disturbance include development of new and existing mineral rights or realty actions (for

example, oil wells, pump jacks, pipeline, road rights of ways, etc...). The cumulative effects and the area of impact would be the same as outlined in section 4.16.1 and 4.23.15.1 of the Vernal Field Office RMP (2008). The proposed action would contribute to these cumulative impacts by making one additional parcel available for lease and mineral development within the ACEC. For specific analysis of the cumulative impacts to the R&I values contained within the ACEC please refer to the applicable sections of this document. The No Action alternative would not contribute any cumulative impacts.

4.3.4. Lands with Wilderness Characteristics (LWC)

The cumulative impact area for Non WSA Lands with Wilderness Characteristics is the Inventory Units' (IU) boundary. The cumulative effects and the area of impact would be the same as outlined in section 4.10.2 and 4.23.8 of the Vernal Field Office RMP (2008). The past, present, and foreseeable future actions with the potential to contribute to surface disturbance include development of new and existing mineral rights (leases) and/or realty actions (for example, pipeline or road rights of way). The proposed action would result in the loss wilderness characteristics within the inventory units affected; however, this level of development was analyzed and accepted by the decision in the VFO RMP. The No Action alternative would not contribute any cumulative impacts.

Table 4.5.

Inventory Unit Name	Total IU Acres	IU Acres overlaying parcels	Parcel #
Desolation Canyon	70,111	532	UT-U115-210
Hells Hole	5,247	320	UT-U115-065
Cripple Cowboy	13,603	481	UT-U115-066
Total:		*1,333*	

4.3.4.1. Desolation Canyon Wilderness Character Inventory Unit (70,111 acres)

Leasing the parcels described in the proposed action (532 acres) combined with all other active leases within this LWC unit (51,975 acres) result in total leased area of 52,507 acres. Cumulatively, 75% of this inventory unit is leased for oil and gas development. If development occurs, it can be expected that wilderness character would be lost within 75% of the unit, subject to each leases' surface use stipulations and topography.

4.3.4.2. Hells Hole Wilderness Character Inventory Unit (5,247 acres)

Leasing the parcels described in the proposed action (320 acres) combined with all other active leases within this LWC unit (858 acres) result in total leased area of 1,178 acres. Cumulatively, 23% of this inventory unit is leased for oil and gas development. If development occurs, it can be expected that wilderness character would be lost within 23% of the unit, subject to each leases' surface use stipulations and topography. This would drop the acreage of the unit below the 5,000 acre threshold.

4.3.4.3. Cripple Cowboy Wilderness Character Inventory Unit (13,603 acres)

Leasing the parcels described in the proposed action (481 acres) combined with all other active leases within this LWC unit (1,815 acres) result in total leased area of 2,296 acres. Cumulatively, 17% of this inventory unit is leased for oil and gas development. If development occurs, it can be expected that wilderness character would be lost within 17% of the unit, subject to each leases' surface use stipulations and topography.

4.3.5. Plants: BLM-sensitive Species

The cumulative impact area for BLM-sensitive plant species will be the Vernal Planning Area. Cumulative impacts are incorporated by reference to 4.17.2 4.23.16, and 4.23.14 in the RMP. Cumulative impacts include reduction in loss of habitat, habitat fragmentation, increased road access for OHV use and illegal collection of individuals. The past, present, and foreseeable future actions include development of new and existing mineral rights, including road, pipeline, and well pad construction. The Proposed Action would contribute to these cumulative impacts by making the proposed parcels available for lease sale and mineral development. The No Action alternative would not contribute any cumulative impacts.

4.3.6. Livestock Grazing & Rangeland Health Standards

The cumulative impact area for the lease sale is the boundary of the affected allotments. Ground disturbing activities associated with oil and gas development would include well pad construction, road upgrades and construction, compressor station and pipeline construction. This development results in a loss of AUMs and provides conditions for invasive plant species establishment and increase.

Natural resources affected within these allotments would include direct surface disturbing impacts to soil and vegetation from ground disturbing activities. Permitted livestock use on some of these allotments has already been reduced due to oil and gas development. Future reductions would be expected as a direct result of fragmentation and loss of forage. Surface impacts also directly (*alter water flow*) and indirectly (*noise and traffic offset animals loafing and watering at ponds*) affect the water improvements specifically managed for livestock. The analysis for any changes in AUM allocation and general grazing operations throughout these allotments will occur in separate permit renewal NEPA documents. The proposed action would contribute to these cumulative effects by making eleven parcels available for leased mineral development within active grazing allotments.

The No Action alternative will not result in an accumulation of impacts.

4.3.7. Recreation

The cumulative impact area for the Nine Mile Canyon SRMA is the SRMA boundary. The rationale for this boundary is the interconnected access of recreational resources (trailheads, campgrounds, etc.) within each SRMA. Cumulative impacts are incorporated by reference to 4.12.2. and 4.23.10 in the RMP. The past, present, and foreseeable future actions include development of new and existing mineral rights (including pump jacks, roads, pipelines, well pad construction, etc...). Cumulative impacts include noise, light and traffic from oil and gas drilling and production in the area which change the recreational experience of the area. The proposed

action would contribute to these cumulative impacts by making one additional parcel available for lease and mineral development. Cumulatively, this would reduce the availability and/or quality of outdoor recreation opportunities (both dispersed and developed) on public lands within the VFO planning area. Currently 32,162 acres are leased for oil and gas development within the Nine Mile Canyon SRMA (44,168 acres). The proposed action would lease an additional five parcels 532 acres for a total of 32,694 Acres or 74% of the SRMA. The no action alternative would not result in an accumulation of impacts.

The cumulative impact area for the campground is the divide road area. The past, present, and foreseeable future actions include development of new and existing mineral rights (including pump jacks, roads, pipelines, well pad construction, etc...). Cumulative impacts include noise, light and traffic from oil and gas drilling and production in the area which change the recreational experience of the area. The proposed action would contribute to these cumulative impacts by making one additional parcel available for lease and mineral development, which may result in development that could be noticed by campground users. The proposed action would contribute to these cumulative impacts by reducing the availability and/or quality of outdoor recreation opportunities (both dispersed and developed) on public lands within the VFO planning area. The no action alternative would not result in an accumulation of impacts.

4.3.8. Visual Resources

The cumulative impact area considered for visual resources is the applicable inventory units of the Vernal Field Visual Resource Inventory (November 2011). The rationale for this boundary is that the visual resource inventory serves as the baseline information for assessing potential effects to visual resources within the proposed projects. Cumulative impacts are incorporated by reference to 4.12.2. and 4.23.10 of the Vernal Field Office RMP (2008). The past, current and future activities in the inventory unit would cumulatively increase the cultural modification done to the landscape. This is viewed as negative impact when assessing the scenic quality of an area. The proposed action would contribute to these cumulative impacts by making seven parcels available for lease and mineral development (four in Class II areas, five in Class III areas). Visual contrast analysis will be conducted to determine if development is in compliance with VRM standards when the project proponents begin the work of developing the minerals within the parcels. When a plan of development is created, site specific VRM analysis will be conducted. The No Action alternative would not contribute any cumulative impacts.

4.3.9. Wildlife: Migratory Birds Including Raptors

The cumulative impact area for Migratory Birds will be the Vernal Planning Area. Cumulative impacts are incorporated by reference to 4.21.2 and 4.23.18 in the Vernal RMP. Cumulative impacts include loss of migratory bird habitat, habitat fragmentation, and disruption or alteration of seasonal migration routes. The past, present, and foreseeable future actions with the potential to contribute to surface disturbance include development of new and existing mineral rights or realty actions (for example, pipeline or road rights of way) and the continuation of agricultural activities. The proposed action would contribute to these cumulative impacts by making eleven parcels available for lease sale and mineral development, with the potential for future surface disturbance should the leases be developed. The No Action alternative would not contribute any cumulative impacts.

4.3.10. Wildlife: Non-USFWS Designated

The cumulative impact area for elk and mule deer will be the Vernal Planning Area. Cumulative impacts are incorporated by reference to 4.21.2 and 4.23.18 in the Vernal RMP. Cumulative impacts to general wildlife and raptors include reduction in Animal Unit Months (AUMs) for wildlife and loss of wildlife and fisheries habitat, habitat fragmentation, and disruption or alteration of seasonal migration routes. The past, present, and foreseeable future actions with the potential to contribute to surface disturbance include development of new and existing mineral rights or realty actions (for example, pipeline or road rights of way) or the continuation of agricultural activities. The proposed action would contribute to these cumulative impacts by making nine parcels available for lease and mineral development, with the potential for future surface disturbance should the leases be developed. The No Action alternative would not contribute any cumulative impacts.

4.3.11. Wildlife: Threatened, Endangered, Proposed or Candidate

The cumulative impact area for Threatened, Endangered, Candidate, or Sensitive Animal Species will be the Vernal Planning Area. Cumulative impacts are incorporated by reference to 4.17.2, 4.21.2, and 4.23.14 in the Vernal RMP. Cumulative impacts to threatened, endangered, candidate, or sensitive animal species include reduction in AUMs for wildlife and loss of wildlife and fisheries habitat (including water depletion), habitat fragmentation, and disruption or alteration of seasonal migration routes. The past, present, and foreseeable future actions with the potential to contribute to surface disturbance include development of new and existing mineral rights or realty actions (for example, pipeline or road rights of way) or the continuation of agricultural activities. The proposed action would contribute to these cumulative impacts by making eleven parcels available for lease sale and mineral development, with the potential for future surface disturbance should the leases be developed. The No Action alternative would not contribute any cumulative impacts.

This page intentionally
left blank

Chapter 5. Consultation and Coordination:

This page intentionally
left blank

The ID Team Checklist (Appendix C) provides the rationale for issues that were considered but not analyzed further. The issues were identified through the public and agency involvement process described below.

Table 5.1. List of Persons, Agencies and Organizations Consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Utah State Historic Preservation Office (SHPO)	Consultation for undertakings, as required by the National Historic Preservation Act (NHPA) (16 USC 470)	Consultation with SHPO was sent on May 28 2014. SHPO concurred with the findings of the BLM VFO June
Ute Mountain Ute Tribe; Ute Indian Tribe; Goshute Indian Tribe; Zia Pueblo Tribe; White Mesa Ute Tribe; Navajo Nation; Laguna Pueblo Tribe; Northwest Band of Shoshone Tribe; Southern Ute Tribe; Eastern Shoshone Tribe; Eastern Shoshone Tribe; Santa Clara Pueblo Tribe; Hopi Tribe; Jemez Pueblo	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	Letters containing notification of this lease sale, location maps, and legal descriptions of the proposed parcels were sent to the Tribes on 8/6/2015. The letters detailed the leasing proposal and requested comments and concerns. No responses have been received.
Private land owners	Coordinated with as a leasing program partner.	In April 2015, letters were sent to all known private landowners potentially impacted by the proposed leasing. No response has been received.
Utah Public Lands Policy and Coordination Office	Coordinated with as a leasing program partner.	In February 2015, a letter providing notice of the lease sale, parcel locations and an invitation to attend parcel site-visits was transmitted to PLPCO. A response dated April 23, 2015 was received providing scoping comments. A summary of the review of these scoping comments is below.
National Park Service	Coordinated with as a leasing program partner.	In February 2015, a letter providing notice of the lease sale, parcel locations, and invitation t attend parcel site-visits was transmitted to NPS. A response dated February 26, 2015 provided comments on parcels intersecting the Old Spanish National historic Trail. All of the parcels were located within the Price Field Office, so the comments had no bearing on this EA.
BLM Moab Field Office	Coordinated with as a leasing program partner.	A portion of the proposed leases are managed by the VFO through the Vernal RMP, even though they are located in Grand County and are therefore technically within the Moab Field Office. Coordination with Moab occurred throughout the writing of this EA to ensure their concerns were addressed for these parcels.

5.1. Scoping Comments

5.1.1. Utah Department of Natural Resources Utah Geological Survey

Utah Department of Natural Resources Utah Geological Survey identified that various parcels were located within Known Recoverable Coal Resource Areas for the Book Cliffs coal field. All of the parcels potentially conflicting with KRCRAs were previously deferred from the EA analysis as described in section 1.3 of this EA.

5.1.2. Utah Division of Wildlife Resources

Utah Division of Wildlife Resources (UDWR) identified that various parcels were located in or near Wildlife Management Areas, Price River, San Rafael River, and Muddy Creek. All the identified parcels were located in the Price Field Office and therefore have no bearing on this EA.

UDWR identified that various parcels overlapped the State's Sage Grouse Management Areas (SGMA) identified in the Conservation Plan for Greater Sage Grouse in Utah. With the exception of parcel 179, all parcels were either located in the Price Field Office, or were previously deferred from this EA analysis as described in section 1.3. They recommended compensatory mitigation for impacts at a ration of 4:1, and recommended timing restrictions. Further coordination regarding parcel 179 regarding this recommendation is pending.

UDWR identified that parcels UTU-1115-179 and UTU-1115-210 are located within 0.5 miles of historic raptor nests. They recommended buffers and surveys be applied to any development. Leas Stipulation UT-S-261 TL-Raptor Buffers will be attached to these parcels and should be adequate for the leasing stage to notify potential lessors of restrictions associated with raptor nests. All other parcels were either located in the Price Field Office or were previously deferred from this EA analysis as described in section 1.3.

UDWR identified that parcels UTU-1115-058, UTU-1115-062, UTU-1115-065, UTU-1115-066, and UTU-1115-179 are located within crucial deer and elk summer and fawning/calving areas. They recommended timing restrictions be applied to any development. Leas Stipulation UT-S-247 TL-Crucial Elk Calving and Deer Fawning Habitat will be attached to these parcels and should be adequate for the leasing stage to address these concerns. All other parcels were either located in the Price Field Office or were previously deferred from this EA analysis as described in section 1.3.

UDWR identified that parcel UTU-1115-072 is located within crucial winter mule deer habitat. They recommended timing restrictions be applied to any development. Further coordination regarding this recommendation is pending. All other parcels were either located in the Price Field Office or were previously deferred from this EA analysis as described in section 1.3.

UDWR identified that parcel UTU-1115-179 is located within crucial winter elk habitat. They recommended timing restrictions be applied to any development. Lease Stipulation UT-S-230 TL-Crucial Deer and Elk Winter Range will be attached to this parcel and should be adequate for the leasing stage to address these concerns. All other parcels were either located in the Price Field Office or were previously deferred from this EA analysis as described in section 1.3.

UDWR identified several parcels as being within crucial desert bighorn sheep habitat. All parcels were either located in the Price Field Office or were previously deferred from this EA analysis as described in section 1.3.

UDWR identified that parcel UTU-1115-210 is located within crucial Rocky Mountain bighorn sheep year-long habitat. They recommended timing restrictions be applied to any development. Further coordination regarding parcel 179 regarding this recommendation is pending. All other parcels were either located in the Price Field Office or were previously deferred from this EA analysis as described in section 1.3.

UDWR identified that parcel UTU-1115-040 is located within crucial pronghorn year-long habitat. They recommended timing restrictions be applied to any development. Further coordination regarding parcel UTU-1115-040 regarding this recommendation is pending. All other parcels were either located in the Price Field Office or were previously deferred from this EA analysis as described in section 1.3.

UDWR identified that parcel UTU-1115-074 contains a major stream or river. They recommended implementation of Best Management Practices to minimize impacts to wildlife. Further coordination regarding parcel UTU-1115-040 regarding this recommendation is pending. Lease Stipulation UT-S-123 NSO Riparian, Floodplains, and Public Water Reserves will be attached to this parcel and should be adequate for the leasing stage to address these concerns. All other parcels were either located in the Price Field Office or were previously deferred from this EA analysis as described in section 1.3.

UDWR identified that a parcel was located on an island in the green river, and that several parcels were located in white-tailed praire dog habitat. These parcels were previously deferred from this EA analysis as described in section 1.3. All other parcels were located in the Price Field Office.

5.2. Onsite Visits

Onsites for all parcels were conducted throughout April 2015. An interdisciplinary team visited each parcel. Pictures of the parcels are included in Appendix F.

This page intentionally
left blank

Chapter 6. List of Preparers

This page intentionally
left blank

Table 6.1. List of Preparers

Name	Title	Responsible for the Following Section(s) of this Document
Stephanie Howard	Environmental Coordinator	Air Quality
Melissa Wardle	Natural Resource Specialist	Team Lead, Chapters 1 and 2
Bill Civish	Recreation Planner	ACECs, WSR, Wilderness Characteristics, Recreation, SRMA, Visual Resources
Erin Goslin	Archaeologist	Cultural Resources
Dan Emmett	Wildlife Biologist	Wildlife
Jessi Brunson	Botanist	Plants
Craig Newman	Range Conservationist	Livestock Grazing and Rangeland Health

This page intentionally
left blank

Chapter 7. References

This page intentionally
left blank

AECOM and STI, 2014 Final Utah Air Resource Management Strategy Modeling Project Impact Assessment Report. http://www.blm.gov/ut/st/en/prog/more/air_quality/airprojs.html

BLM. 2012. Final Environmental Impact Statement for the Greater Natural Buttes.

BLM, 2011 Air Resource Management Strategy (ARMS). http://www.blm.gov/style/medialib/blm/ut/natural_resources/airQuality.Par.48166.File.dat/BLMUtahARMS.pdf

British Meteorological Office (BMO). 2009. British Meteorological Office's Hadley Centre, 2009. Accessed January 2009 at http://www.metoffice.gov.uk/climatechange/science/monitoring/.

IPCC, 2013: Summary for Policymakers. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boscung, Y. Xia, V. Bex, and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

USDA/USDOI. 2011 Memorandum of Understanding. http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&pageid=251152

This page intentionally
left blank

Appendix A. Preliminary Oil and Gas Lease Sale List

Table A.1. Preliminary Oil and Gas Lease Sale List

Legal Description of Available Parcel	Lease Stipulations and Notices
UT-1115-040 T. 9 S., R. 19 E., Salt Lake. Sec. 13: NENE, S2NE, E2SW, SE. 360 Acres Uintah County, Utah Vernal Field Office	**Stipulations** UT-S-01: Air Quality UT-S-96: NSO-Fragile Soils/Slopes Greater Than 40% UT-S-100: CSU-Fragile Soils/Slopes (21%- 40%) UT-S-119: NSO-Lower Green river Corridor UT-S-123: NSO Riparian, Floodplains, Public Water Reserves UT-S-157: NSO/CSU/TL-Visual Resources UT-S-261: TL-Raptor Buffers UT-S-278: CSU-Bald Eagle Winter Roost WO IM 2002-174: Endangered Species Act Stipulation **Notices** T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin UT-LN-37: Bald Eagle Habitat UT-LN-40: Golden Eagle Habitat UT-LN-45: Migratory Birds UT-LN-49: Utah Sensitive Species UT-LN-51: Special Status Plants: Not Federally Listed UT-LN-53: Riparian Areas UT-LN-67: Historical and Cultural Resource Values UT-LN-68: Notification and Consultation Regarding Cultural Resources UT-LN-69: High Potential for Cultural Resources UT-LN-70 High Potential for Cultural Resource Occurance UT-LN-96: Air Quality Mitigation Measures UT-LN-107: Bald Eagle
UT-1115-058 T. 16 S., R. 21 E., Salt Lake Sec. 34: SWNW, W2SW. Grand County, Utah 120 Acres Grand County, Utah Vernal Field Office	**Stipulations** UT-S-01: Air Quality UT-S-96: NSO-NSO – Fragile Soils/Slopes Greater Than 40% UT-S-100: CSU – Fragile Soils/Slopes (21%- 40%) UT-S-157: NSO/CSU/TL – Visual Resources UT-S-159: CSU VRM II UT-S-247: TL-Crucial Elk Calving and Deer Fawning Habitat UT-S-261: TL-Raptor Buffers WO IM 2002-174: Endangered Species Act Stipulation **Notices** T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin T&E-06: Mexican Spotted Owl UT-LN-37: Bald Eagle Habitat UT-LN-40: Golden Eagle Habitat UT-LN-45: Migratory Birds UT-LN-49: Utah Sensitive Species UT-LN-51: Special Status Plants: Not Federally Listed UT-LN-67: Historical and Cultural Resource Values UT-LN-68: Notification and Consultation Regarding Cultural Resources

	UT-LN-69: High Potential for Cultural Resources UT-LN-70: High Potential for Cultural Resource Occurance UT-LN-96: Air Quality Mitigation Measures
UT-1115-062 T. 15 1/2 S., R. 23 E., Salt Lake Sec. 33: Lot 1; Sec. 34: Lots 3, 4, N2SW, SESW. Grand County, Utah 220.82 Acres Grand County, Utah Vernal Field Office	**Stipulations** UT-S-01: Air Quality UT-S-96: NSO– Fragile Soils/Slopes Greater Than 40% UT-S-100: CSU – Fragile Soils/Slopes (21%- 40%) UT-S-157: NSO/CSU/TL – Visual Resources UT-S-247: TL-Crucial Elk Calving and Deer Fawning Habitat UT-S-261: TL-Raptor Buffers WO IM 2002-174: Endangered Species Act Stipulation **Notices** T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin T&E-06: Mexican Spotted Owl UT-LN-37: Bald Eagle Habitat UT-LN-40: Golden Eagle Habitat UT-LN-45: Migratory Birds UT-LN-49: Utah Sensitive Species UT-LN-51: Special Status Plants: Not Federally Listed UT-LN-67: Historical and Cultural Resource Values UT-LN-68: Notification and Consultation Regarding Cultural Resources UT-LN-96: Air Quality Mitigation Measures
UT-1115-065 T. 15 S., R. 25 E., Salt Lake Sec. 25: NWNW; Sec. 26: S2NE, E2SW; Sec. 35: W2NW, NWSW. 320 Acres Grand County, Utah Vernal Field Office	**Stipulations** UT-S-01: Air Quality UT-S-96: NSO – Fragile Soils/Slopes Greater Than 40% UT-S-100: CSU – Fragile Soils/Slopes (21%- 40%) UT-S-157: NSO/CSU/TL – Visual Resources UT-S-159: CSU VRM II UT-S-247: TL-Crucial Elk Calving and Deer Fawning Habitat UT-S-261: TL-Raptor Buffers WO IM 2002-174: Endangered Species Act Stipulation **Notices** T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin T&E-06: Mexican Spotted Owl UT-LN-37: Bald Eagle Habitat UT-LN-40: Golden Eagle Habitat UT-LN-45: Migratory Birds UT-LN-49: Utah Sensitive Species UT-LN-51: Special Status Plants: Not Federally Listed UT-LN-67: Historical and Cultural Resource Values UT-LN-68: Notification and Consultation Regarding Cultural Resources UT-LN-96: Air Quality Mitigation Measures

UT-1115-066 T. 15 1/2 S., R. 25 E., Salt Lake Sec. 35: All. 440.64 Acres Grand County, Utah Vernal Field Office	**Stipulations** UT-S-01:Air Quality UT-S-96: NSO – Fragile Soils/Slopes Greater Than 40% UT-S-100: CSU – Fragile Soils/Slopes (21%- 40%) UT-S-157: NSO/CSU/TL – Visual Resources UT-S-159: CSU-Visual Resources-VRM II UT-S-247: TL-Crucial Elk Calving and Deer Fawning Habitat UT-S-261: TL-Raptor Buffers WO IM 2002-174: Endangered Species Act Stipulation **Notices** T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin T&E-06: Mexican Spotted Owl UT-LN-37: Bald Eagle Habitat UT-LN-40: Golden Eagle Habitat UT-LN-45: Migratory Birds UT-LN-49: Utah Sensitive Species UT-LN-51: Special Status Plants: Not Federally Listed UT-LN-67: Historical and Cultural Resource Values UT-LN-68: Notification and Consultation Regarding Cultural Resources UT-LN-96: Air Quality Mitigation Measures
UT-1115-178 T. 11 S., R. 10 E., Salt Lake Sec. 8: Lots 1, 3 and 4; Sec. 9: Lots 1-5; Sec. 10: Lots 1-4; Sec. 11: Lot 4. 329.79 Acres Duchesne County, Utah Vernal Field Office	**Stipulations** UT-S-01: Air Quality UT-S-96: NSO – Fragile Soils/Slopes Greater Than 40% UT-S-100: CSU – Fragile Soils/Slopes (21%- 40%) UT-S-157: NSO/CSU/TL – Visual Resources UT-S-247: TL-Crucial Elk Calving and Deer Fawning Habitat UT-S-261: TL-Raptor Buffers WO IM 2002-174: Endangered Species Act Stipulation **Notices** T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin UT-LN-37: Bald Eagle Habitat UT-LN-40: Golden Eagle Habitat UT-LN-45: Migratory Birds UT-LN-49: Utah Sensitive Species UT-LN-51: Special Status Plants: Not Federally Listed UT-LN-67: Historical and Cultural Resource Values UT-LN-68: Notification and Consultation Regarding Cultural Resources UT-LN-96: Air Quality Mitigation Measures
UT-1115-179 T. 11 S., R. 10 E., Salt Lake Sec. 20: N2NE, NENW; Sec. 29: W2NW, SW; Sec. 30: NENE, S2NE, SE; Sec. 31: NENE; Sec. 33: N2NW. 760 Acres Duchesne County, Utah Vernal Field Office	**Stipulations** UT-S-01:Air Quality UT-S-96: NSO – Fragile Soils/Slopes Greater Than 40% UT-S-100: CSU – Fragile Soils/Slopes (21%- 40%) UT-S-157: NSO/CSU/TL – Visual Resources UT-S-230: TL-Crucial Deer and Elk Winter Range UT-S-247: TL-Crucial Elk Calving and Deer Fawning Habitat UUT-S-261: TL-Raptor Buffers WO IM 2002-174: Endangered Species Act Stipulation **Notices** T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin

	UT-LN-37: Bald Eagle Habitat UT-LN-40: Golden Eagle Habitat UT-LN-45: Migratory Birds UT-LN-49: Utah Sensitive Species UT-LN-51: Special Status Plants: Not Federally Listed UT-LN-67: Historical and Cultural Resource Values UT-LN-68: Notification and Consultation Regarding Cultural Resources UT-LN-69: High Potential for Cultural Resources UT-LN-70: High Potential for Cultural Resource Occurance UT-LN-96: Air Quality Mitigation Measures
UT-1115-210 T. 11 S., R. 15 E., Salt Lake Sec. 28: NESE, S2SE; Sec. 33: Lots 1-3, SENE, NW, N2SE. 531.89 Acres Duchesne County, Utah Vernal Field Office	**Stipulations** UT-S-01: Air Quality UT-S-23: NSO/CSU/TL-Nine Mile Canyon ACEC UT-S-96: NSO – Fragile Soils/Slopes Greater Than 40% UT-S-100: CSU – Fragile Soils/Slopes (21%- 40%) UT-S-123: NSO Riparian, Floodplains, Public Water Reserves UT-S-157: NSO/CSU/TL – Visual Resources UT-S-247: TL-Crucial Elk Calving and Deer Fawning Habitat UT-S-261: TL-Raptor Buffers WO IM 2002-174: Endangered Species Act Stipulation **Notices** T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin T&E-06: Mexican Spotted Owl UT-LN-37: Bald Eagle Habitat UT-LN-40: Golden Eagle Habitat UT-LN-45: Migratory Birds UT-LN-49: Utah Sensitive Species UT-LN-51: Special Status Plants: Not Federally Listed UT-LN-53: Riparian Areas UT-LN-67: Historical and Cultural Resource Values UT-LN-68: Notification and Consultation Regarding Cultural Resources UT-LN-69: High Potential for Cultural Resources UT-LN-70: High Potential for Cultural Resource Occurance UT-LN-96: Air Quality Mitigation Measures UT-LN-106: Special Recreation Management Area
UT-1115–220 T. 2 S., R. 2 W., Uintah Special Sec. 31: SE. , 160 Acres Duchesne County, Utah Vernal Field Office	**Stipulations** UT-S-01: Air Quality UT-S-261: TL-Raptor Buffers WO IM 2002-174: Endangered Species Act Stipulation **Notices** T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin UT-LN-37: Bald Eagle Habitat UT-LN-40: Golden Eagle Habitat UT-LN-45: Migratory Birds UT-LN-49: Utah Sensitive Species UT-LN-51: Special Status Plants: Not Federally Listed UT-LN-67: Historical and Cultural Resource Values UT-LN-68: Notification and Consultation Regarding Cultural Resources

	UT-LN-96: Air Quality Mitigation Measures
UT-1115–222 T. 2S R. 3W., Uintah Special Sec. 28: NWSE, SWSE 70 Acres Duchesne County, Utah Vernal Field Office	**Stipulations** UT-S-01:Air Quality UT-S-123: NSO Riparian, Floodplains, Public Water Reserves UT-S-247: TL-Crucial Elk Calving and Deer Fawning Habitat UT-S-261: TL-Raptor Buffers WO IM 2002-174: Endangered Species Act Stipulation **Notices** T&E-03: Endangered Fish of the Upper Colorado River Drainage Basin UT-LN-37: Bald Eagle Habitat UT-LN-40: Golden Eagle Habitat UT-LN-45: Migratory Birds UT-LN-49: Utah Sensitive Species UT-LN-51: Special Status Plants: Not Federally Listed UT-LN-53: Riparian Areas UT-LN-67: Historical and Cultural Resource Values UT-LN-68: Notification and Consultation Regarding Cultural Resources UT-LN-96: Air Quality Mitigation Measures

Table A.2. Utah Stipulations

Stipulation Number	Utah Stipulations
UT-S-01	**AIR QUALITY** All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower shall not emit more than 2 grams of NOx per horsepower-hour. **Exception:** This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower. **Modification**: None **Waiver**: None AND All new and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gram of NOx per horsepower-hour. **Exception**: None **Modification**: None **Waiver**: None
UT-S-23	**NO SURFACE OCCUPANCY/CONTROLLED SURFACE USE/TIMING LIMITATIONS – NINE MILE CANYON ACEC** No surface occupancy for oil and gas leasing within approximately 17,162 acres, and approximately 209 acres will be open to leasing subject to moderate constraints such as timing limitations and controlled surface use. **Exception**: None **Modification**: None **Waiver**: None

UT-S-96	**NO SURFACE OCCUPANCY – FRAGILE SOILS/SLOPES GREATER THAN 40%** No surface occupancy for slopes greater than 40 percent. **Exception:** If after an environment analysis the authorized officer determines that it would cause undue or unnecessary degradation to pursue other placement alternatives; surface occupancy in the NSO area may be authorized. Additionally a plan shall be submitted by the operator and approved by BLM prior to construction and maintenance and include: ● An erosion control strategy, ● GIS modeling, and ● Proper survey and design by a certified engineer. **Modification:** Modifications also may be granted if a more detailed analysis, i.e. Order I, soil survey conducted by a qualified soil scientist finds that surface disturbance activities could occur on slopes greater than 40% while adequately protecting the area from accelerated erosion.**Waiver**: None
UT-S-100	**CONTROLLED SURFACE USE – FRAGILE SOILS/SLOPES (21%-40%)** If surface-disturbing activities cannot be avoided on slopes from 21-40% a plan will be required. The plan will approved by BLM prior to construction and maintenance and include: ● An erosion control strategy, ● GIS modeling, ● Proper survey and design by a certified engineer. **Exception**: None **Modification**: None **Waiver**: None
UT-S-123	**NO SURFACE OCCUPANCY – RIPARIAN, FLOODPLAINS, AND PUBLIC WATER RESERVES** No new surface-disturbing activities are allowed within active flood plains, wetlands, public water reserves, or 100 meters of riparian areas. Keep construction of new stream crossings to a minimum. **Exception:** An exception could be authorized if: (a) there are no practical alternatives (b) impacts could be fully mitigated, or (c) the action is designed to enhance the riparian resources. **Modification**: None **Waiver**: None
UT-S-157	**NO SURFACE OCCUPANCY/CONTROLLED SURFACE USE TIMING LIMITATION – VISUAL RESOURCES** Visual resource management activities will comply with BLM Handbook 8410-1. Within VRM Class I areas, very limited management activity will be allowed, with the objective of preserving the existing character of the landscape, allowing for natural ecological changes. The level of change to the landscape should be very low and shall not attract attention. Within VRM Class II areas, surface-disturbing activities will retain the existing character of the landscape. The level of change to the landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any change to the landscape shall repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape. Within VRM Class III areas, surface disturbing activities will partially retain the

	existing character of the landscape. The allowable level of change will be moderate, may attract attention, but should not dominate the view of the casual observer. Landscape changes should repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape. Within VRM Class IV areas, surface disturbing activities are allowed to dominate the view and the major focus of viewer attention. Major modifications to the existing character of the landscape are allowed. But every attempt should be made to minimize and mitigate the impacts. **Exception:** Exempted are recognized utility corridors. **Modification:** None **Waiver:** None
UT-S-159	**CONTROLLED SURFACE USE – VISUAL RESOURCES - VRM II** Within VRM II areas, surface-disturbing activities will retain the existing character of the landscape. The level of change to the landscape should be low. Management activities may be seen, but should not attract attention of the casual observer. Any change to the landscape must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. **Exception**: Exempted are recognized utility corridors. **Modification**: None **Waiver**: None
UT-S-230	**TIMING LIMITATION – CRUCIAL DEER AND ELK WINTER RANGE** No surface disturbing activities in deer and elk crucial winter range from **December 1 - April 30.** **Exception**: This restriction would not apply if and/or elk are not present, or if it is determined through analysis and coordination with UDWR that impacts could be mitigated. Factors to be considered would include snow depth, temperature, snow crusting, location of disturbance, forage quantity and quality, animal condition, and expected duration of disturbance. **Modification**: The stipulation could be modified based on findings of collaborative monitoring and analysis. For example, the winter range configuration and time frames could be changed if current animal use patterns are determined to be inconsistent with the dates and boundaries established. **Waiver**: This stipulation could be waived if it is determined through collaborative monitoring and analysis that the area is not crucial winter range or that timing restrictions are unnecessary.
UT-S-247	**TIMING LIMITATION – CRUCIAL ELK CALVING AND DEER FAWNING HABITAT** In order to protect crucial elk calving and deer fawning habitat exploration, drilling, and other development activity will not be allowed from **May 15 - June 30.** **Exception**: This restriction would not apply to maintenance and operation of existing facilities. This stipulation may be excepted if either the resource values change or the lessee/operator demonstrates to BLMs satisfaction that adverse impact can be mitigated. **Modification**: None **Waiver**: None

UT-S-261	**TIMING LIMITATION – RAPTOR BUFFERS** Raptor management will be guided by the use of "Best Management Practices for Raptors and Their Associated Habitats in Utah" (Utah BLM, 2006, Appendix A), utilizing seasonal and spatial buffers, as well as mitigation, to maintain and enhance raptor nesting and foraging habitat, while allowing other resource uses. **Exception**: None **Modification**: Criteria that would need to be met, prior to implementing modifications to the spatial and seasonal buffers in the "*Raptor BMPs",* would include the following: 1. Completion of a site-specific assessment by a wildlife biologist or other qualified individual. See example (Attachment 1 of the Raptor BMPs in Appendix A) 2. Written documentation by the BLM Field Office Wildlife Biologist, identifying the proposed modification and affirming that implementation of the proposed modification(s) would not affect nest success or the suitability of the site for future nesting. Modification of the *"*BMPs*"* would not be recommended if it is determined that adverse impacts to nesting raptors would occur or that the suitability of the site for future nesting would be compromised. 3. Development of a monitoring and mitigation strategy by a BLM biologist, or other raptor biologist. Impacts of authorized activities would be documented to determine if the modifications were implemented as described in the environmental documentation or Conditions of Approval, and were adequate to protect the nest site. Should adverse impacts be identified during monitoring of an activity, BLM would follow an appropriate course of action, which may include cessation or modification of activities that would avoid, minimize or mitigate the impact, or, with the approval of UDWR and the USFWS, BLM could allow the activity to continue while requiring monitoring to determine the full impact of the activity on the affected raptor nest. A monitoring report would be completed and forwarded to UDWR for incorporation into the Natural Heritage Program (NHP) raptor database. **Waiver**: None
UT-S-278	**CONTROLLED SURFACE USE – BALD EAGLE WINTER ROOST** Protect and restore cottonwood bottoms for bald eagle winter habitat along the Green and White Rivers, at Pelican Lake, and at the Cliff Creek Bald Eagle roost site, as well as any new roost sites discovered in the future. **Exception**: None **Modification**: None **Waiver**: None

Table A.3. Utah's Lease Notices

Number	Utah's Lease Notices
UT-LN-37	**BALD EAGLE HABITAT** The lessee/operator is given notice that lands in this lease have been identified as containing Bald Eagle Habitat. Modifications to the Surface Use Plan of Operations may be required in order to protect the Bald Eagle and/or habitat from surface disturbing activities in accordance with Section 6 of the lease terms, Endangered Species Act, and 43 CFR 3101.1-2.
UT-LN-40	**GOLDEN EAGLE HABITAT** The lessee/operator is given notice that lands in this lease have been identified as containing Golden Eagle Habitat. Modifications to the Surface Use Plan of Operations may be required in order to protect the Golden Eagle and/or habitat from surface disturbing activities in accordance with Section 6 of the lease terms, Endangered Species Act, and 43 CFR 3101.1-2.

UT-LN-45	**MIGRATORY BIRD** The lessee/operator is given notice that surveys for nesting migratory birds may be required during migratory bird breeding season whenever surface disturbances and/or occupancy is proposed in association with fluid mineral exploration and development within priority habitats. Surveys should focus on identified priority bird species in Utah. Field surveys will be conducted as determined by the authorized officer of the Bureau of Land Management. Based on the result of the field survey, the authorized officer will determine appropriate buffers and timing limitations.
UT-LN-49	**UTAH SENSITIVE SPECIES** The lessee/operator is given notice that no surface use or otherwise disruptive activity would be allowed that would result in direct disturbance to populations or individual special status plant and animal species, including those listed on the BLM sensitive species list and the Utah sensitive species list. The lessee/operator is also given notice that lands in this parcel have been identified as containing potential habitat for species on the Utah Sensitive Species List. Modifications to the Surface Use Plan of Operations may be required in order to protect these resources from surface disturbing activities in accordance with Section 6 of the lease terms, Endangered Species Act, Migratory Bird Treaty Act and 43 CFR 3101.1-2.
UT-LN-51	**SPECIAL STATUS PLANTS: NOT FEDERALLY LISTED** The lessee/operator is given notice that lands in this lease have been identified as containing special status plants, not federally listed, and their habitats. Modifications to the Surface Use Plan of Operations may be required in order to protect the special status plants and/or habitat from surface disturbing activities in accordance with Section 6 of the lease terms, Endangered Species Act, and 43 CFR 3101.1-2.
UT-LN-53	**RIPARIAN AREAS** The lessee/operator is given notice that this lease has been identified as containing riparian areas. No surface use or otherwise disruptive activity allowed within 100 meters of riparian areas unless it can be shown that (1) there is no practicable alternative; (2) that all long-term impacts are fully mitigated; or (3) that the construction is an enhancement to the riparian areas. Modifications to the Surface Use Plan of Operations may be required in accordance with section 6 of the lease terms and 43CFR3101.1-2.
UT-LN-67	**HISTORICAL AND CULTURAL RESOURCE VALUES** The lessee/operator is given notice that lands in this lease may contain significant Historical and Cultural Resources. Modifications to the Surface Use Plan of Operations may be required for the protection of these resources.
UT-LN-68	**NOTIFICATION & CONSULTATION REGARDING CULTURAL RESOURCES** The lease area may now or hereafter be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), the Archaeological Resources Protections Act (ARPA), the Native American Graves Protection and Repatriation Act (NAGPRA), the American Indian Religious Freedom Act (AIRFA), other statues and Executive Order 13007, and which may be of concern to Native American tribes, interested parties, and the State Historic Preservation Officer (SHPO). BLM will not approve any ground disturbing activities as part of future lease operations until it completes applicable requirements of the National Historic Preservation Act (NHPA), including the completion of any required procedure for notification and consultation with appropriate tribe(s) and/or the SHPO. BLM may require modifications to exploration and development proposals to further its conservation and management objectives on BLM-approved activities that are determine to affect or impact historic or cultural properties and/or resources.

UT-LN-69	**HIGH POTENTIAL FOR CULTURAL RESOURCES** This parcel is located in an area of high concentrations of cultural resources. Known cultural sites are fragile and many are buried under sandy deposits which migrate due to their susceptibility to wind. These sites, or large portions, are not visible from the surface. Therefore, the following mitigation measures may be applied to any surface disturbance of this parcel: 1) pre-surface disturbance cultural resource inventories; 2) pre-surface disturbance subsurface testing; 3) monitoring of ground disturbance; and 4) post-disturbance monitoring identifying resources as the soils stabilize around a project.
UT-LN-70	**HIGH POTENTIAL FOR CULTURAL RESOURCE OCCURRENCE** The lessee/operator is given notice that lands in this lease contain significant Cultural Resources. Modifications to the Surface Use Plan of Operations may be required for the protection of these resources. Class III level block inventories may be required to determine resource location and possible impact to the resource.
UT-LN-96	**AIR QUALITY MITIGATION MEASURES** The lessee is given notice that the Bureau of Land Management (BLM) in coordination with the U.S. Environmental Protection Agency and the Utah Department of Air Quality, among others, has developed the following air quality mitigation measures that may be applied to any development proposed on this lease. Integration of and adherence to these measures may help minimize adverse local or regional air quality impacts from oil and gas development (including but not limited to construction, drilling, and production) on regional ozone formation. ● All internal combustion equipment would be kept in good working order. ● Water or other approved dust suppressants would be used at construction sites and along roads, as determined appropriate by the Authorized Officer. ● Open burning of garbage or refuse would not occur at well sites or other facilities. ● Drill rigs would be equipped with Tier II or better diesel engines. ● Vent emissions from stock tanks and natural gas TEG dehydrators would be controlled by routing the emissions to a flare or similar control device which would reduce emissions by 95% or greater. ● Low bleed or no bleed pneumatics would be installed on separator dump valves and other controllers. ● During completion, flaring would be limited as much as possible. Production equipment and gathering lines would be installed as soon as possible. ● Well site telemetry would be utilized as feasible for production operations. ● Stationary internal combustion engine would comply with the following standards: 2g NO_x/bhp-hr for engines <300HP; and 1g NO_x/bhp-hr for engines >300HP. Additional site-specific measures may also be employed to avoid or minimize effects to local or regional air quality. These additional measures will be developed and implemented in coordination with the U.S. Environmental Protection Agency, the Utah Department of Air Quality, and other agencies with expertise or jurisdiction as appropriate based on the size of the project and magnitude of emissions.

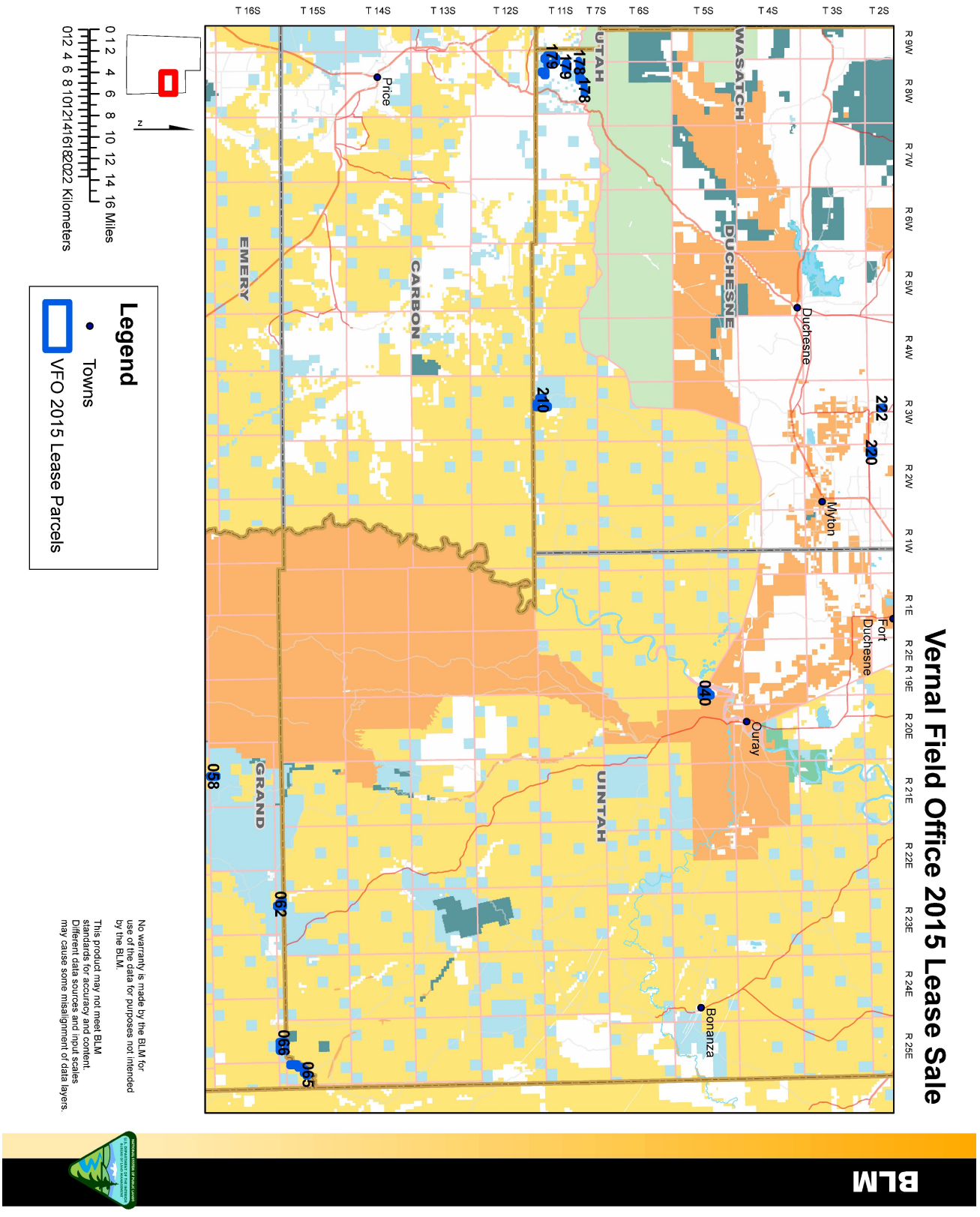
UT-LN-106	**SPECIAL RECREATION MANAGEMENT AREA** The lessee/operator is given notice that lands in this lease have been identified as being within a Special Recreation Management Area. Modifications to the Surface Use Plan of Operations may be required in order once an activity plan is prepared for the area to protect sensitive resources from surface disturbing activities in accordance with the Vernal RMP.
UT-LN-107	**BALD EAGLE** The Lessee/Operator is given notice that the lands in this parcel contains nesting/winter roost habitat for the bald eagle. The bald eagle was de-listed in 2007; however, it is still afforded protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 1940). Therefore, avoidance or use restrictions may be placed on portions of the lease. Application of appropriate measures will depend on whether the action is temporary or permanent, and whether it occurs within or outside the bald eagle breeding or roosting season. A temporary action is completed prior to the following breeding or roosting season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action continues for more than one breeding or roosting season and/or causes a loss of eagle habitat or displaces eagles through disturbances, i.e. creation of a permanent structure. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease will not lead to the need to consider listing the eagle as threatened or endangered. Integration of, and adherence to the following measures will facilitate review and analysis of any submitted permits under the authority of this lease. Current avoidance and minimization measures include the following: 1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All Surveys must be conducted by qualified individual(s), and be conducted according to protocol. 2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated. 3. Water production will be managed to ensure maintenance or enhancement of riparian habitat. 4. Temporary activities within 1.0 mile of nest sites will not occur during the breeding season of January 1 to August 31, unless the area has been surveyed according to protocol and determined to be unoccupied. 5. Temporary activities within 0.5 miles of winter roost areas, e.g., cottonwood galleries, will not occur during the winter roost season of November 1 to March 31, unless the area has been surveyed according to protocol and determined to be unoccupied. 6. No permanent infrastructure will be placed within 1.0 mile of nest sites. 7. No permanent infrastructure will be placed within 0.5 miles of winter roost areas. 8. Remove big game carrion from within 100 feet of lease roadways occurring within bald eagle foraging range. 9. Avoid loss or disturbance to large cottonwood gallery riparian habitats. 10. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable habitat Utilize directional drilling to avoid direct impacts to large cottonwood gallery riparian habitats. Ensure that such directional drilling does not intercept or degrade alluvial aquifers.

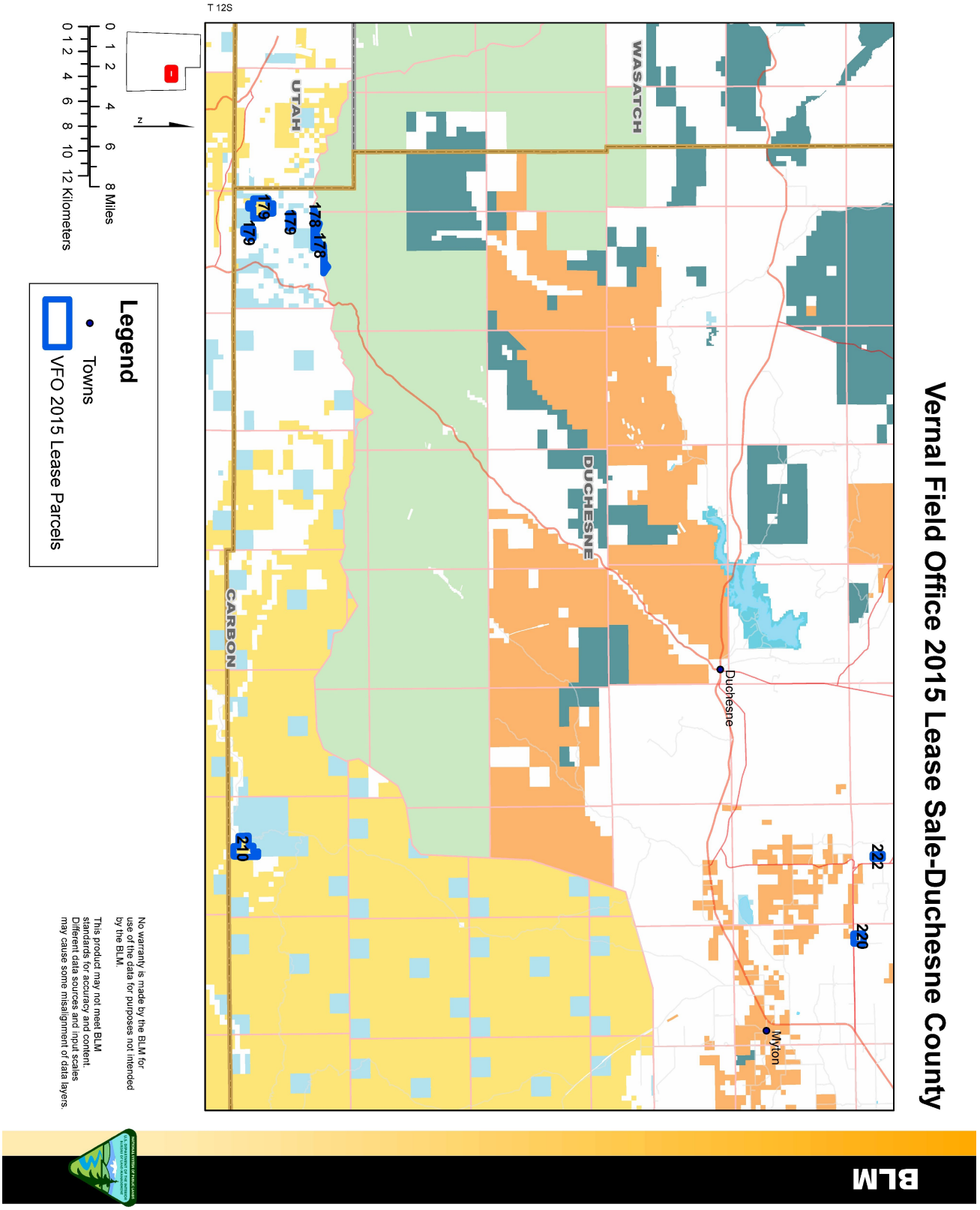
	11. All areas of surface disturbance within riparian areas and/or adjacent uplands should be re-vegetated with native species. Additional measures may also be employed to avoid or minimize effects to the species between the lease sale stage and lease development stage. These additional measures will be developed and implemented in coordination with the U.S. Fish and Wildlife Service.
T&E-03	**ENDANGERED FISH OF THE UPPER COLORADO RIVER DRAINAGE BASIN** The Lessee/Operator is given notice that the lands in this parcel contain Critical Habitat for the Colorado River fish (bonytail, humpback chub, Colorado pike minnow, and razorback sucker) listed as endangered under the Endangered Species Act, or these parcels have watersheds that are tributary to designated habitat. Critical habitat was designated for the four endangered Colorado River fishes on March 21, 1994(59 FR 13374-13400). Designated critical habitat for all the endangered fishes includes those portions of the 100-year floodplain that contain primary constituent elements necessary for survival of the species. Avoidance or use restrictions may be placed on portions of the lease. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act. Integration of and adherence to these measures will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of Endangered Species Act, Section 7 consultation at the permit stage. Current avoidance and minimization measures include the following: 1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s). 2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. 3. Water production will be managed to ensure maintenance or enhancement of riparian habitat. 4. Avoid loss or disturbance of riparian habitats. 5. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable riparian habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers. 6. Conduct watershed analysis for leases in designated critical habitat and overlapping major tributaries in order to determine toxicity risk from permanent facilities. 7. Implement Appendix B (Hydrologic Considerations for Pipeline Crossing Stream Channels, Technical Note 423). 8. Drilling will not occur within 100 year floodplains of rivers or tributaries to rivers that contain listed fish species or critical habitat. 9. In areas adjacent to 100-year flood plains, particularly in systems prone to flash floods, analyze the risk for flash floods to impact facilities, and use closed loop drilling, and pipeline burial or suspension according to Appendix B (Hydrologic Considerations for Pipeline Crossing Stream Channels, Technical Note 423, to minimize the potential for equipment damage and resulting leaks or spills. Water depletions from *any* portion of the Upper Colorado River drainage basin above Lake Powell are considered to adversely affect or adversely modify the critical habitat

	of the four resident endangered fish species, and must be evaluated with regard to the criteria described in the Upper Colorado River Endangered Fish Recovery Program. Formal consultation with USFWS is required for all depletions. All depletion amounts must be reported to BLM. Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the ESA
T&E-06	**MEXICAN SPOTTED OWL** The Lessee/Operator is given notice that the lands in this parcel contain suitable habitat for Mexican spotted owl, a federally listed species. The Lessee/Operator is given notice that the lands in this lease contain Designated Critical Habitat for the Mexican spotted owl, a federally listed species. Critical habitat was designated for the Mexican spotted owl on August 31, 2004 (69 FR 53181-53298). Avoidance or use restrictions may be placed on portions of the lease. Application of appropriate measures will depend whether the action is temporary or permanent, and whether it occurs within or outside the owl nesting season. A temporary action is completed prior to the following breeding season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action continues for more than one breeding season and/or causes a loss of owl habitat or displaces owls through disturbances, i.e. creation of a permanent structure. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act. Integration of, and adherence to these measures, will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of Endangered Species Act, Section 7 consultation at the permit stage. Current avoidance and minimization measures include the following: 1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All Surveys must be conducted by qualified individual(s). 2. Assess habitat suitability for both nesting and foraging using accepted habitat models in conjunction with field reviews. Apply the conservation measures below if project activities occur within 0.5 mile of suitable owl habitat. Determine potential effects of actions to owls and their habitat. a. Document type of activity, acreage and location of direct habitat impacts, type and extent of indirect impacts relative to location of suitable owl habitat. b. Document if action is temporary or permanent. 3. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. 4. Water production will be managed to ensure maintenance or enhancement of riparian habitat. 5. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in canyon habitat suitable for Mexican spotted owl nesting. 6. For all temporary actions that may impact owls or suitable habitat:

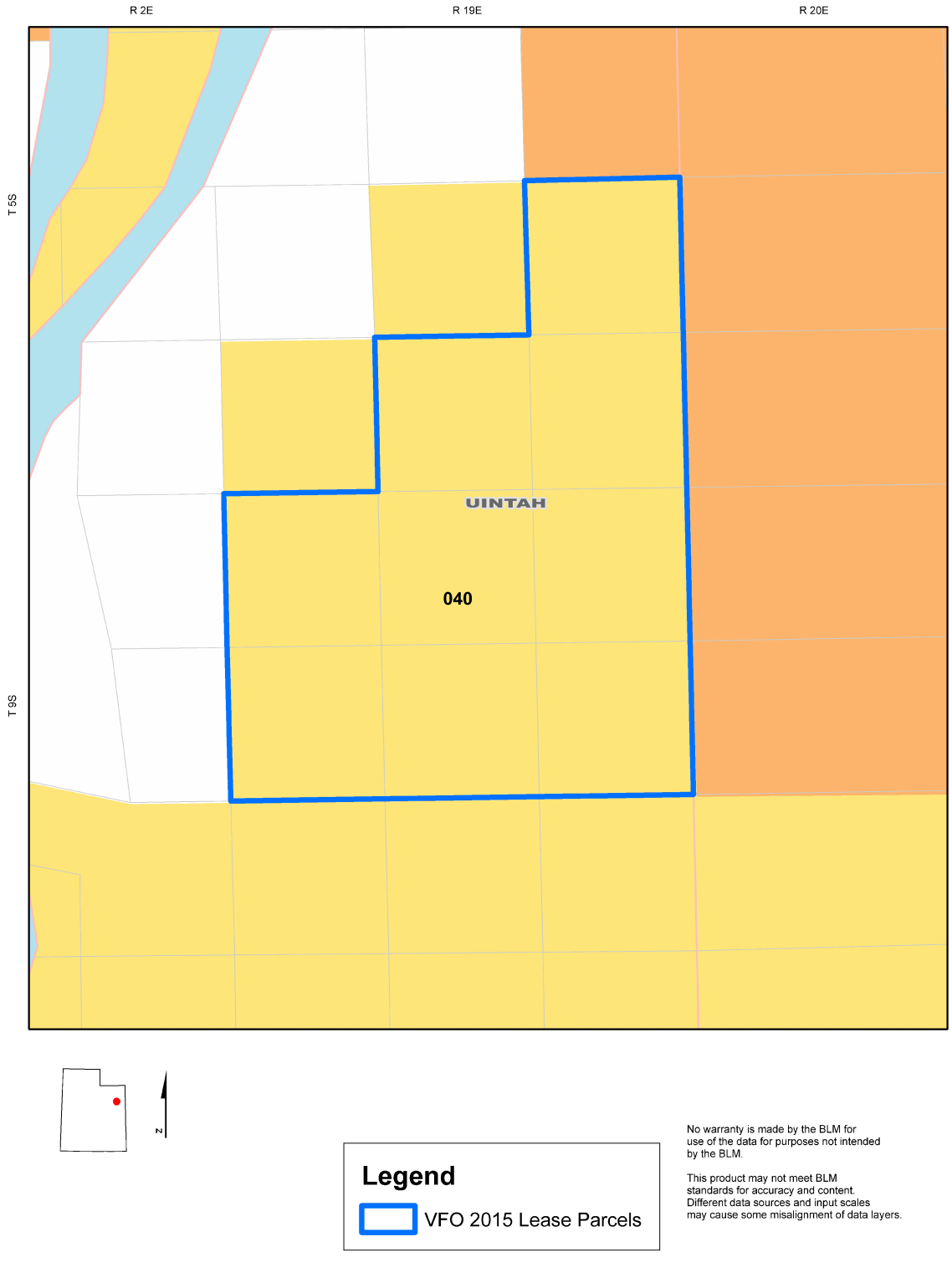
	a. If the action occurs entirely outside of the owl breeding season (March 1 – August 31), and leaves no permanent structure or permanent habitat disturbance, action can proceed without an occupancy survey. b. If action will occur during a breeding season, survey for owls prior to commencing activity. If owls are found, activity must be delayed until outside of the breeding season. c. Rehabilitate access routes created by the project through such means as raking out scars, re-vegetation, gating access points, etc. 7. For all permanent actions that may impact owls or suitable habitat: a. Survey two consecutive years for owls according to accepted protocol prior to commencing activities. b. If owls are found, no actions will occur within 0.5 mile of identified nest site. If nest site is unknown, no activity will occur within the designated Protected Activity Center (PAC). c. Avoid drilling and permanent structures within 0.5 mi of suitable habitat unless surveyed and not occupied. d. Reduce noise emissions (e.g., use hospital-grade mufflers) to 45 dBA at 0.5 mile from suitable habitat, including canyon rims. Placement of permanent noise-generating facilities should be determined by a noise analysis to ensure noise does not encroach upon a 0.5 mile buffer for suitable habitat, including canyon rims. e. Limit disturbances to and within suitable habitat by staying on approved routes. f. Limit new access routes created by the project. Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the U.S. Fish and Wildlife Service between the lease sale stage and lease development stage to ensure continued compliance with the Endangered Species Act.

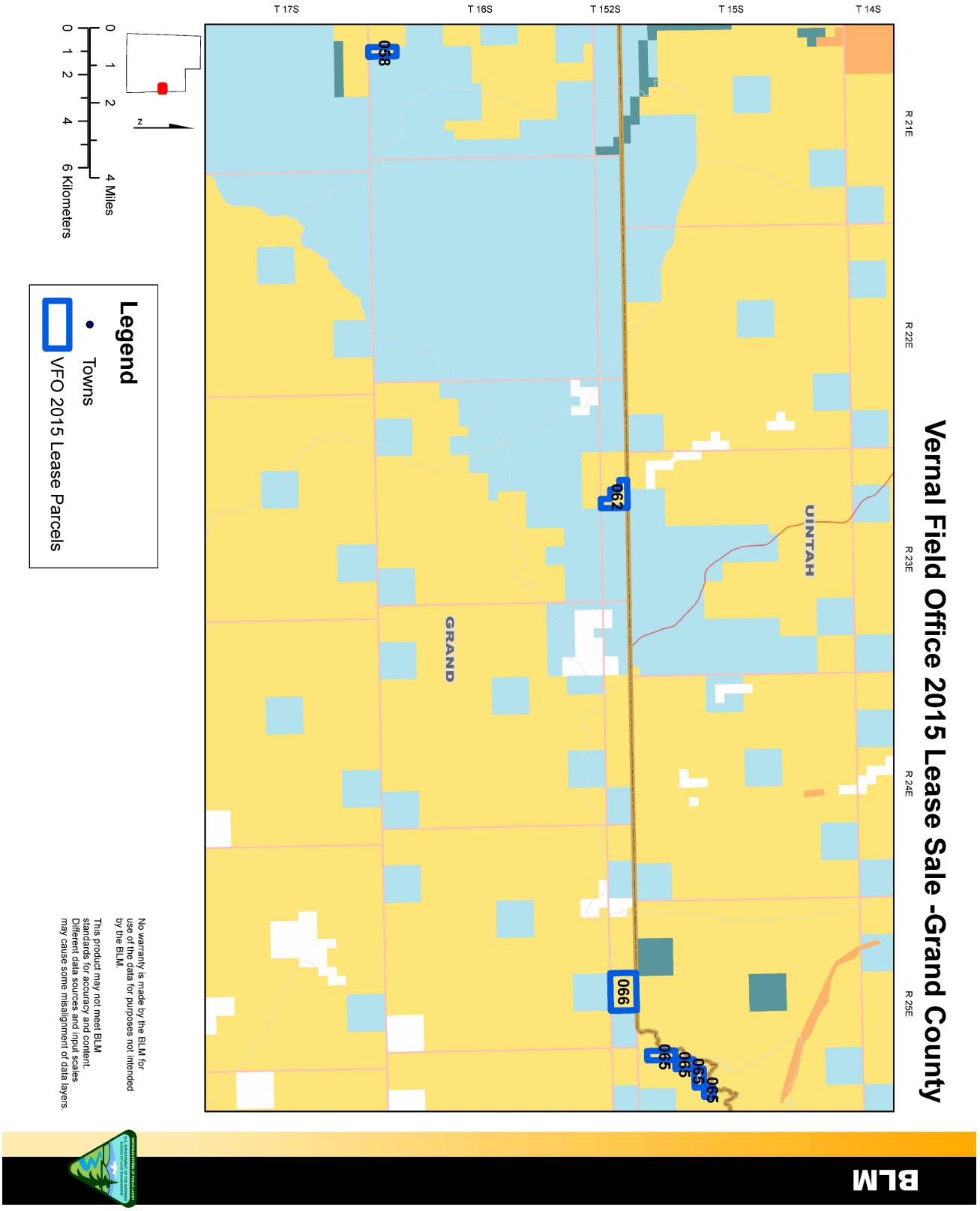
Appendix B. Maps

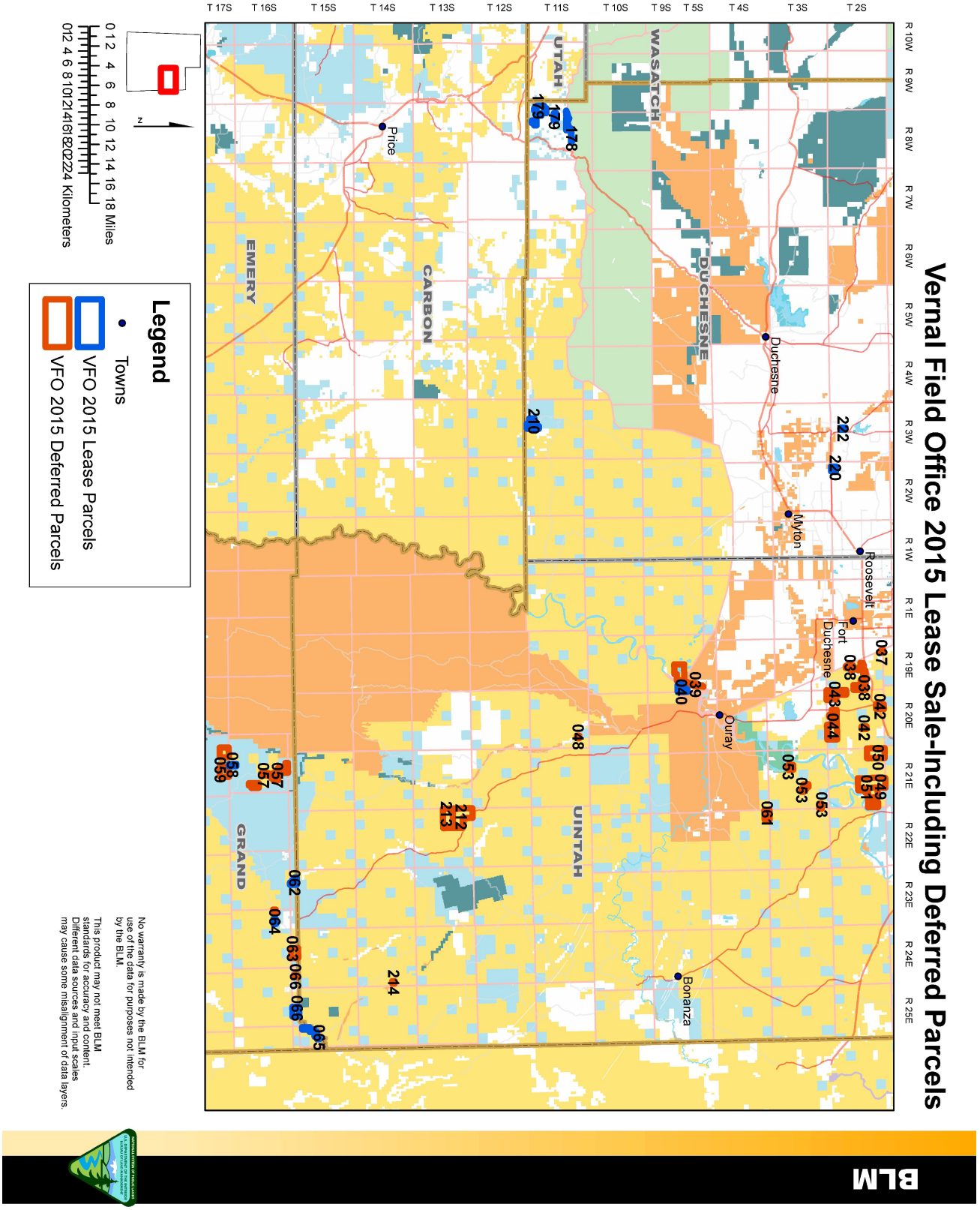



Vernal Field Office 2015 Lease Sale-Duchesne County
BLM
WASATCH
DUCHESNE
CARBON
UTAH
Duchesne
Myton
222
220
210
179
178
T 12S
N
0 1 2 4 6 8 Miles
0 1 2 4 6 8 10 12 Kilometers
Legend
Towns
VFO 2015 Lease Parcels
No warranty is made by the BLM for use of the data for purposes not intended by the BLM.
This product may not meet BLM standards for accuracy and content. Different data sources and input scales may cause some misalignment of data layers.

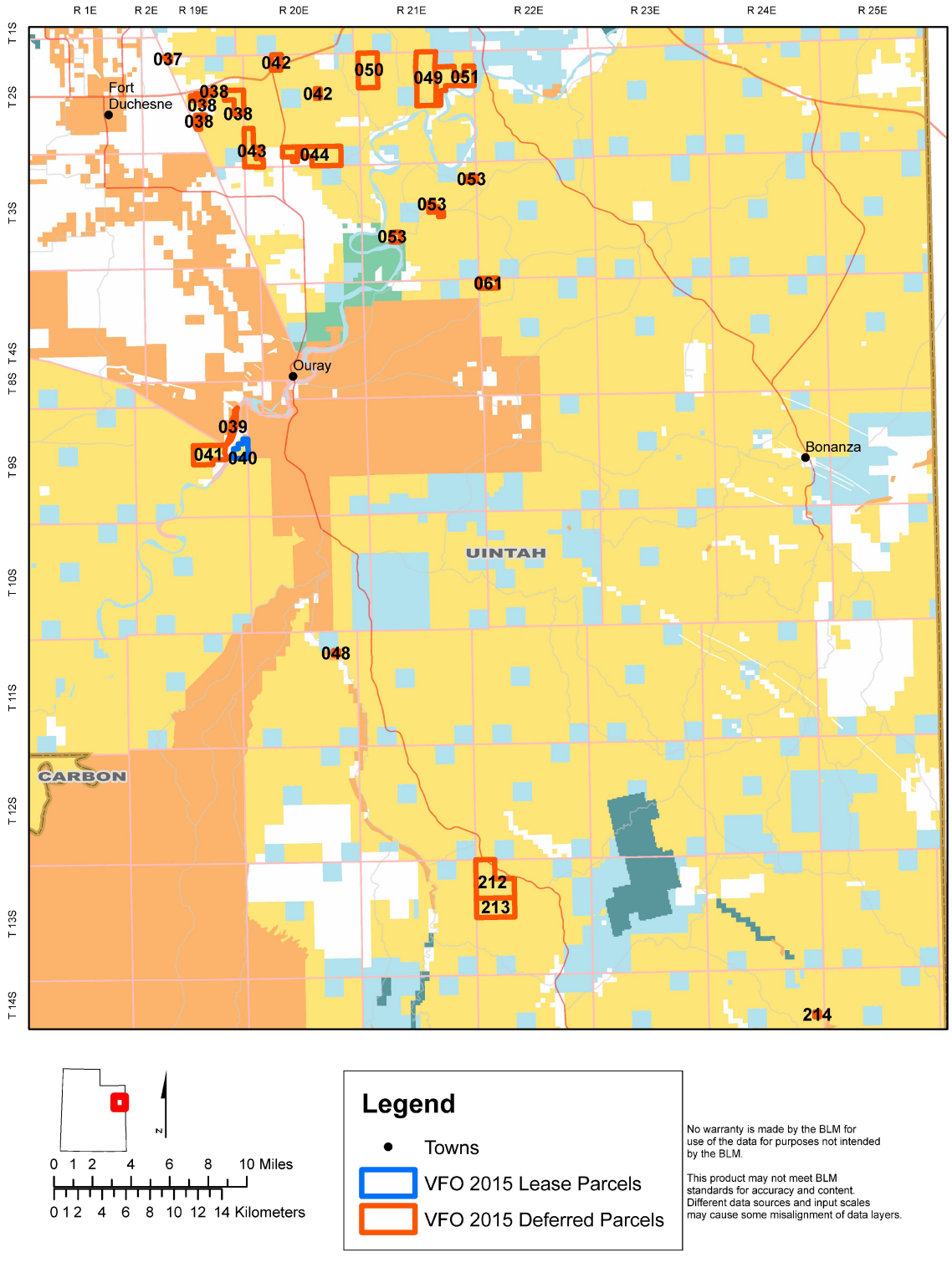
Vernal Field Office 2015 Lease Sale-Uintah County

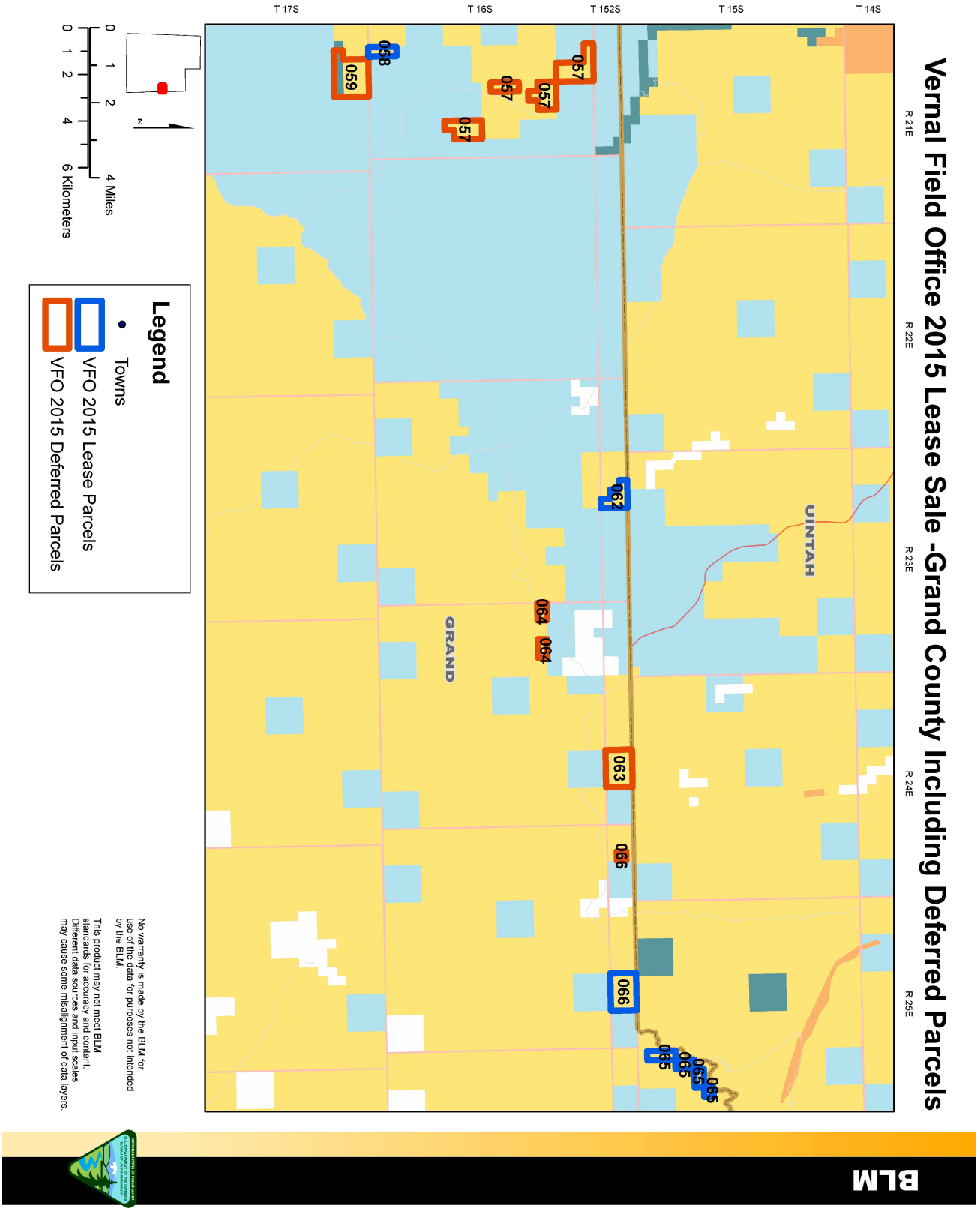



Vernal Field Office 2015 Lease Sale -Grand County
BLM
T 17S
T 16S
T 152S
T 15S
T 14S
R 21E
R 22E
R 23E
R 24E
R 25E
UINTAH
GRAND
068
062
066
065
065
065
065
Legend
Towns
VFO 2015 Lease Parcels
0 1 2 4 6 Kilometers
0 1 2 4 Miles
N
No warranty is made by the BLM for use of the data for purposes not intended by the BLM.
This product may not meet BLM standards for accuracy and content. Different data sources and input scales may cause some misalignment of data layers.


Vernal Field Office 2015 Lease Sale-Including Deferred Parcels
BLM
Legend
Towns
VFO 2015 Lease Parcels
VFO 2015 Deferred Parcels
N
0 1 2 4 6 8 10 12 14 16 18 Miles
0 1 2 4 6 8 10 12 14 16 18 20 22 24 Kilometers
No warranty is made by the BLM for use of the data for purposes not intended by the BLM.
This product may not meet BLM standards for accuracy and content. Different data sources and input scales may cause some misalignment of data layers.
Duchesne
Myton
Roosevelt
Fort Duchesne
Ouray
Bonanza
Price
WASATCH
DUCHESNE
UTAH
CARBON
EMERY
GRAND
UINTAH
T 2S
T 3S
T 4S
T 5S
T 9S
T 10S
T 11S
T 12S
T 13S
T 14S
T 15S
T 16S
T 17S
R 10W
R 9W
R 8W
R 7W
R 6W
R 5W
R 4W
R 3W
R 2W
R 1W
R 1E
R 19E
R 20E
R 21E
R 22E
R 23E
R 24E
R 25E

Vernal Field Office 2015 Lease Sale-Uintah County Including Deferred Parcels




Vernal Field Office 2015 Lease Sale -Grand County Including Deferred Parcels
BLM
R 21E
R 22E
R 23E
R 24E
R 25E
T 17S
T 16S
T 152S
T 15S
T 14S
UINTAH
GRAND
057
057
057
057
058
059
062
063
064
064
066
066
065
065
065
065
Legend
Towns
VFO 2015 Lease Parcels
VFO 2015 Deferred Parcels
0 1 2 4 6 Kilometers
0 1 2 4 Miles
N
No warranty is made by the BLM for use of the data for purposes not intended by the BLM.
This product may not meet BLM standards for accuracy and content. Different data sources and input scales may cause some misalignment of data layers.

This page intentionally
left blank

Appendix C. Interdisciplinary Checklist

INTERDISCIPLINARY TEAM CHECKLIST

Project Title: November 2015 Vernal Oil and Gas Lease Sale

NEPA Log Number: DOI-BLM-UT-G010-2015-0089-EA

Project Leader: Melissa Wardle

DETERMINATION OF STAFF: (Choose one of the following abbreviated options for the left column)

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for relevant impact that need to be analyzed in detail in the EA

NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Determination	Resource/Issue	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
PI	Air Quality & Greenhouse Gas Emissions	Leasing itself would not have impacts to air quality. However, should development occur on issued leases, emissions from earth-moving equipment, vehicle traffic, drilling and completion activities, separators, oil storage tanks, dehydration units, and daily tailpipe and fugitive dust emissions could adversely affect air quality. No standards have been set by EPA or other regulatory agencies for greenhouse gases. In addition, the assessment of greenhouse gas emissions and climate change is still in its earliest stages of formulation. Global scientific models are inconsistent, and regional or local scientific models are lacking so that it is not technically feasible to determine the net impacts to climate due to greenhouse gas emissions. It is anticipated that greenhouse gas emissions associated with this action and its alternative(s) would be negligible.	Stephanie Howard	3/26/2015
NP	BLM Natural Areas	None of the proposed lease parcels occur within any BLM Natural Areas as per GIS and RMP review.	Bill Civish	4//23/2015

Determination	Resource/Issue	Rationale for Determination	Signature	Date
PI	Cultural: Archaeological Resources	Pursuant to 36 CFR 800.16(y) this project is considered to be an undertaking. However, as the lease sale does not authorize any ground disturbance, the proposed lease sale will have no direct effect on cultural resources. A complete Class III inventory of the proposed lease parcels has not occurred; however, a Class I survey was conducted over the entire lease area. The Class I survey identified the known cultural resource sites within each parcel and considered specific data relating to the individual proposed parcels such as topography and soils. It has been determined that reasonable development could occur without adverse impacts to cultural properties eligible to the NRHP. The BLM will not approve any ground disturbing activities that may affect such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect properties or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated. **SHPO consultation is ongoing**.	Erin Goslin	5/8/2015
NI	Cultural: Native American Religious Concerns	The following tribes were notified of the proposed lease sale via certified letter: Ute Mountain Ute Tribe; Ute Indian Tribe; Goshute Indian Tribe; Zia Pueblo Tribe; White Mesa Ute Tribe; Navajo Nation; Laguna Pueblo Tribe; Northwest Band of Shoshone Tribe; Southern Ute Tribe; Eastern Shoshone Tribe; Eastern Shoshone Tribe; Santa Clara Pueblo Tribe; Hopi Tribe; Jemez Pueblo. Maps of the parcels were provided to each of the tribes. They were asked to identify traditional cultural places or any other areas of traditional cultural importance that need to be considered within the APE. Tribal consultation was conducted on XXX and concluded on XXX. **Tribal consultation is ongoing**.	Erin Goslin	5/8/2015
PI	Designated Areas: Areas of Critical Environmental Concern	One parcel occurs within an area designated as an ACEC. Parcel (ID#) 210 occurs within the Nine Mile ACEC. Relevance and importance values for Nine Mile ACEC include cultural resources, high quality scenery, and special status species.	Bill Civish	4/23/2015

Determination	Resource/Issue	Rationale for Determination	Signature	Date
NP	Designated Areas: Wild and Scenic Rivers	No Wild or Scenic Rivers are present in the project area.	Stephanie Howard	5/15/2015
NP	Designated Areas: Wilderness Study Areas	None of the proposed lease parcels occur within any Wilderness Study Areas as per GIS and RMP review.	Bill Civish	4/3/23
NI	Environmental Justice	As defined in EO 12898, minority, low income populations and disadvantaged groups may be present within the counties involved in this lease sale. However, all citizens can file an expression of interest or participate in the bidding process (43 CFR §3120.3-2). The stipulations and notices applied to the subject parcels do not place an undue burden on these groups. Leasing the nominated parcels would not cause any disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, or Native American Tribes because the minerals are federal or and the surface is private or BLM.	Stephanie Howard	3/26/2015
NI	Farmlands (prime/unique)	None of the proposed Lease Parcels occur within prime or unique Farmlands as defined by the NRCS.	Stephanie Howard	3/26/2015
NI	Fuels/Fire Management	Fuels Management: Any new disturbance and additional traffic will increase the amount of *Bromus tectorum*. An increase in *Bromus tectorum* may lead to a changing fire regime and an increase in fire frequency. Implementing the Green River District reclamation standards and ensuring the standards are met will minimize the new populations of *Bromus tectorum*. Fire Management: Additional traffic will increase the risk of human caused fire starts. None of this rises to a level that requires detailed analysis because leasing will not result in on the ground disturbance. Fuels and Fire will be revisited at the site specific proposal stage should these parcels be leased.	Blaine Tarbell	5/13/2015
NI	Geology/Minerals/Energy Production	Leasing, in and of itself, will have no impact on geologic conditions, minerals or energy production. At the development stage, the approval process will identify any site-specific concerns regarding geologic conditions (e.g. slope stability) and apply best practices, as described in the The Gold Book: Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. Also, compliance with Federal regulations contained in 43 CFR Part 3160, as implemented by the BLM Onshore Oil and Gas Orders, will assure that down-hole operations include casing and cementing programs designed to, "protect and/or isolate	Justin Snyder	3/26/2015

Determination	Resource/Issue	Rationale for Determination	Signature	Date
		all...lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals." Prospectively valuable deposits of minerals in the area include Gilsonite, oil shale and tar sands in addition to oil and gas (Surface disturbance will not be carried out to the degree that significant impact to the value of mineral materials would be expected). Finally, the depletion of oil and gas reserves that would accompany lease development is supported by the 2008 Vernal Field Office Resource Management Plan.		
NI	Invasive Plants/Noxious Weeds, Soils & Vegetation	The lease sale alone would not affect Invasive Plants/Noxious Weeds. However, there is an expectation that development will occur in the future, at which time additional NEPA would be conducted. At the development stage, mitigation measures and best management practices will need to be incorporated to avoid the spread of undesirable non-native plant species. Required mitigation measures will need to at a minimum meet the standards set forward within the Vernal Field Office Surface Disturbance Weed Policy (IM-UTG010-10-001). Future site specific NEPA should discuss the non-native species present, the likelihood they would spread, the developed mitigation measures, and information on chemical weed control and how it tiers to the National and local programmatic guidance. Soils: The Vernal RMP requires application of CSU and NSO stipulations on parcels with slopes greater than 21%. Nine of the parcels contain slopes greater than 21%. Inclusion of the stipulations UT-S-96 NSO slopes >40% and UT-S-100 CSU slopes 21–40% should be sufficient to notify the operator of any potential future development restrictions.	IP/Veg: Jessica Brunson Soils: Stephanie Howard	4/28/2015 5/15/2015
NI	Lands/Access	The proposed area is located within the Vernal Field Office Resource Management Plan area, which allows for oil and gas development with associated road and pipeline right-of-ways. Current land uses, within the area identified in the proposed action and adjacent lands, consist of existing oil and gas development, wildlife habitat, recreational use, and sheep and cattle ranching. No existing land uses would be changed or modified by the implementation of the proposed action. Master Title Plats have been checked for conflicts with Public Water Reserves, and no PWRs were identified.	Margo Roberts	5/15/2015

Determination	Resource/Issue	Rationale for Determination	Signature	Date
		There are Uintah and Duchesne roads on the proposed parcels. They have been identified on the Counties Transportation Maps as Class B and D roads. I have attached the site specifics for each Lease Parcel.		
PI	Lands with Wilderness Characteristics (LWC)	Several parcels proposed in the lease sale are located in areas found to possess wilderness character. Parcel UTU1115–210 occurs within the Desolation Canyon wilderness character inventory unit. UTU1115–065 occurs within the Hells Hole wilderness character inventory unit. UTU1115–066 occurs within the Cripple Cowboy wilderness character inventory unit.	Bill Civish	4/23/2015
PI	Livestock Grazing & Rangeland Health Standards	In nine parcels (see Chapter Three for specific parcel numbers) there is potential to inhibit livestock movement due to disturbance and activity. The loss of forage, weed invasion and soil erosion in the allotments will lessen the available AUMs. Increased traffic may lead to an increase in vehicle livestock collisions, increasing mortality rates. Site specific mitigation may need to take place where Range Improvement Projects (RIPs) exist. This may include a 200 yard buffer from all RIPs. Depending on amount of disturbance, compensatory adjustments may be needed if AUMs are reduced on livestock operations; this will be done during specific Environmental Analysis documents for the allotments.. All parcels listed have cumulative effects that already have reached the Potential Impact level.	Craig Newman	3/20/2015
NI	Paleontology	Leasing, in and of itself, will have no impact on paleontological resources. At the development stage, the BLM will require paleontological surveys to be conducted before any surface disturbance takes place. These surveys will be used to guide appropriate mitigation measures. In addition to these measures, and due to the fact that geologic formations within the Uinta Basin regularly and predictably produce scientifically important paleontological resources, if resources as described in BLM Handbook H-8270-1 are discovered during operations, all activities which would affect such sites will be suspended and the discovery reported promptly to the authorized officer.	Justin Snyder	3/26/2015

Determination	Resource/Issue	Rationale for Determination	Signature	Date
PI	Plants: BLM Sensitive	The following UT BLM sensitive plant species have been identified as having potential habitat within one or more federal surface parcels: *Yucca sterilis.*Application of lease notices UT-LN-49 and UT-LN-51 is required on all parcels.	Jessi Brunson	5/4/2015
NP	Plants: Threatened, Endangered, Proposed, or Candidate	No candidate, proposed, and federally listed plant species have been identified within the eleven parcels.	Stephanie Howard	5/15/2015
NI	Plants: Wetland/Riparian	Although leasing of the parcels will not directly affect wetlands or riparian zones, if oil and gas development occurs the small portions of the mapped 100 year floodplains that are found in parcels (ID#s) UT-1115-8028-040, UT-1115-B-8203-210, and UT-1115-7987-074 which tend to exhibit wetland and riparian type functions could be affected. Impacts to these areas will be mitigated by Lease Stipulation UT-S-123 and Lease Notice UT-LN-53.	Melissa Wardle	5/6/2015
PI	Recreation	Parcel (ID#s) 210 is located within the Nine Mile Special Recreation Management Area (SRMA). 066 is within one half mile of a developed recreation site.	Bill Civish	4/23/2015
NI	Socio-Economics	No impact to the social or economic status of the counties or nearby communities would occur from the leasing of these parcels due to their small size of this project in relation to ongoing development throughout the Uinta Basin.	Stephanie Howard	3/26/2015
PI	Visual Resources	Parcels UT–1115–058, UT–115–065 and UT–115–066 contain lands managed as VRM class II. The objective of class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, by should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color and texture found in the predominant natal features of the characteristic landscape. New projects can be approved if they blend in with the existing surroundings and don't attract attention. Parcels UT–1115–078, UT–115–179, UT–1115–210 and UT–1115–062 contain lands managed as VRM class III. The objective of VRM class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominate natural features of the characteristic landscape. New projects can be approved that are not large scale, dominating features.	Bill Civish	4/23/2015

Determination	Resource/Issue	Rationale for Determination	Signature	Date
NI	Wastes (hazardous/solid)	The analysis in the Vernal RMP is sufficient. No hazardous or solid waste sites are known to be present. No hazardous or solid waste sites are anticipated to occur as a result of leasing. No stipulations or lease notices apply.	Melissa Wardle	5/6/2014
NI	Water: Floodplains	Floodplains are associated with Parcel (ID#s) UT-1115-8028-040 and UT-1115-B-8203-210. Leasing of the proposed parcels would not, by itself, authorize any ground disturbances. Site-specific effects cannot be analyzed until an exploration or development application is received, after leasing has occurred. However, any development proposal on the lease parcels would be subject to the standard lease terms, the protective lease notices and stipulations identified in Appendix A, and all applicable laws, regulations and onshore orders in existence at the time of lease issuance. Site-specific analysis would be required prior to the approval of any ground disturbance proposal on the parcels. In light of existing knowledge regarding resource values on the subject parcels, which is based upon the analysis in the 2008 Vernal ROD/RMP BLM VFO resource specialist knowledge and parcel site-visits, and the protective measure that would be applied to the parcels if leased, significant impacts beyond those already addressed in the 2008 Vernal ROD/RMP are not anticipated to occur as a result of leasing the proposed parcels. Application of UT-S-123 should be sufficient to notify the operator of any potential future development restrictions.	Melissa Wardle	5/6/2014
NI	Water: Groundwater Quality	Leasing, in and of itself, will have no impact on groundwater quality. At the development stage, compliance with Federal regulations contained in 43 CFR Part 3160, as implemented by the BLM Onshore Oil and Gas Orders, will assure that down-hole operations, “protect and/or isolate all useable water” through the use of steel casing and cement and that surface operations provide for, “adequate protection of groundwater.” No EPA Sole Source Aquifers or State of Utah Drinking Water Source Protection Zones underlie the proposed parcels, although there is potential to encounter useable groundwater with <10,000 ppm Total Dissolved Solids.	Justin Snyder	3/26/2015

Determination	Resource/Issue	Rationale for Determination	Signature	Date
NI	Water: Hydrologic Conditions (stormwater)	Hydrologic conditions do exist in the Vernal Feild Office, Leasing of the proposed parcels would not, by itself, authorize any ground disturbances. Site-specific effects cannot be analyzed until an exploration or development application is received, after leasing has occurred. However, any development proposal on the lease parcels would be subject to the standard lease terms, the protective lease notices and stipulations identified in Appendix A, and all applicable laws, regulations and onshore orders in existence at the time of lease issuance. Site-specific analysis would be required prior to the approval of any ground disturbance proposal on the parcels. In light of existing knowledge regarding resource values on the subject parcels, which is based upon the analysis in the 2008 Vernal ROD/RMP BLM VFO resource specialist knowledge and parcel site-visits, significant impacts beyond those already addressed in the 2008 Vernal ROD/RMP are not anticipated to occur as a result of leasing the proposed parcels.	Melissa Wardle	5/6/2014
NI	Water: Surface Water Quality	Leasing of the proposed parcels would not, by itself, authorize any ground disturbances which could contribute runoff affecting surface water quality. Site-specific effects cannot be analyzed until an exploration or development application is received, after leasing has occurred. However, any development proposal on the lease parcels would be subject to the standard lease terms, the protective lease notices and stipulations identified in Appendix A, and all applicable laws, regulations and onshore orders in existence at the time of lease issuance. Site-specific analysis would be required prior to the approval of any ground disturbance proposal on the parcels. In light of existing knowledge regarding resource values on the subject parcels, which is based upon the analysis in the 2008 Vernal ROD/RMP BLM VFO resource specialist knowledge and parcel site-visits, significant impacts beyond those already addressed in the 2008 Vernal ROD/RMP are not anticipated to occur as a result of leasing the proposed parcels.	Melissa Wardle	5/6/2014
NP	Water: Waters of the U.S.	No waters of the US are present in the project area per GIS information.	Stephanie Howard	5/15/2015

Determination	Resource/Issue	Rationale for Determination	Signature	Date
NP	Wild Horses	The proposed parcels for leasing do not fall within existing wild horse herd areas within the VFO. However, estray horses may be present on parcel 058. The horses that may be present near parcel 058 are considered estray animals under Grand County's livestock code and are fall under the jurisdiction of that County at this time.	Dusty Carpenter	5/15/2015
PI	Wildlife: Migratory Birds	Migratory bird foraging and nesting habitat is present in all parcels. There are known or documented raptor nests within ½ miles of several parcels.	Dan Emmett	4/24/2015
PI	Wildlife: Non-USFWS Designated	Designated elk crucial year long and winter habitat within several parcels. Designated deer crucial year long and winter habitat within several parcels.	Dan Emmett	4/24/2015
PI	Wildlife: Threatened, Endangered, Proposed or Candidate	Is the proposed project in sage grouse PPH or PGH? No. If the answer is yes, the project must conform with WO IM 2012-043. MSO habitat exists within some parcels.	Dan Emmett	4/24/2015
NI	Woodlands/Forestry	Woodlands are present in areas of the proposed lease parcels. Leasing of the proposed parcels would not, by itself, authorize any ground disturbing activities that could affect woodlands. Site-specific effects cannot be analyzed until an exploration or development application is received, after leasing has occurred. However, any development proposal on the lease parcels would be subject to the standard lease terms, the protective lease notices and stipulations identified in Appendix A, and all applicable laws, regulations and onshore orders in existence at the time of lease issuance. Site-specific analysis would be required prior to the approval of any ground disturbance proposal on the parcels. In light of existing knowledge regarding resource values on the subject parcels, which is based upon the analysis in the 2008 Vernal ROD/RMP, BLM VFO resource specialist knowledge and parcel site-visits, and the protective measure that would be applied to the parcels if leased, significant impacts beyond those already addressed in the 2008 Vernal ROD/RMP are not anticipated to occur as a result of leasing the proposed parcels.	David Palmer	5/15/2015

This page intentionally
left blank

Appendix D. Deferred Parcels and Parcel Sections

BLM_Sale ID	Legal Description of Deferred Parcel and deferred Sections	Reason for Deferral
UT-1115-037	T. 6 S., R. 19 E., Salt Lake Sec. 4: Tracts 39 and 40; Sec. 5: All; Sec. 9: Lots 5-7. Uintah County Utah	A majority of the qtr/qtrs are within preliminary priority habitat (PPH) for Sage Grouse
UT-1115-038	T. 6 S., R. 19 E., Salt Lake Sec. 13: N2, SE; Sec 14: Lot 1, NENW; Sec. 15: Lots 3, 4, SENW, SESW Sec. 22: Tract 50; Sec. 24: N2NE Uintah County Utah	A majority of the qtr/qtrs are within preliminary priority habitat (PPH) for Sage Grouse
UT-1115-039	T. 9 S., R. 19 E., Salt Lake Sec. 1: Lots 5-7; Sec. 12: Lots 8-11; Sec. 13: Lot 5; Sec. 14: Lot 5. Uintah County Utah	Completely within Cuckcoo Habitat
UT-1115-041	T. 9 S., R. 19 E., Salt Lake Sec. 14: Lots 1-3, NW, N2SW; Sec. 15: All. Uintah County, Utah	Majority of parcel is within a White-Tail Prairie Dog Colony.
UT-1115-042	T. 6 S., R. 20 E., Salt Lake Sec. 5: Lots 1, 2, S2NE, SE; Sec. 15: E2NE. Uintah County, Utah	A majority of the qtr/qtrs are within preliminary priority habitat (PPH) for Sage Grouse
UT-1115-043	T. 6 S., R. 20 E., Salt Lake Sec. 5: Lots 1, 2, S2NE, SE; Sec. 15: E2NE. Uintah County, Utah	Majority of parcel is within a White-Tail Prairie Dog Colony.
UT-1115–044	T. 6 S., R. 20 E., Salt Lake Sec. 33: N2NE, SWNE, NW, NWSE; Sec. 34: N2, SE; Sec. 35: All. Uintah County, Utah	A majority of the qtr/qtrs are within preliminary priority habitat (PPH) for Sage Grouse
UT-1115-048	T. 11 S., R. 20 E., Salt Lake Sec. 11: NENE. Uintah County, Utah	A majority of the qtr/qtrs are within preliminary priority habitat (PPH) for Sage Grouse
UT-1115-049	T. 6 S., R. 21 E., Salt Lake Secs. 3, 10 and 15: All. Uintah County, Utah	A majority of the qtr/qtrs are within preliminary priority habitat (PPH) for Sage Grouse
UT-1115-050	T. 6 S., R. 21 E., Salt Lake Secs. 6 and 7: All. Uintah County, Utah	A majority of the qtr/qtrs are within preliminary priority habitat (PPH) for Sage Grouse
UT-1115-051	T. 6 S., R. 21 E., Salt Lake Sec. 11: All; Sec. 12: Lots 1, 2, 7, 8, S2; Sec. 14: N2NW, SWNW, W2SW. Uintah County, Utah	A majority of the qtr/qtrs are within preliminary priority habitat (PPH) for Sage Grouse

UT-1115-053	T. 6 S., R. 21 E., Salt Lake Sec. 1: Lots 11 and 12; Sec. 14: NWSW; Sec. 15: W2NE, SENE; Sec. 20: SE. Uintah County, Utah	Majority of parcel is within a White-Tail Prairie Dog Colony.
UT-1115-057	T. 16 S., R. 21 E., Salt Lake Sec. 3: Lots 1-4, S2NE, SE; Sec. 11: W2NE, NW, NESW; Sec. 14: W2NW, NWSW; Sec. 24: NW, N2SW, SWSW. Grand County, Utah	A majority of the qtr/qtrs are within preliminary priority habitat (PPH) for Sage Grouse
UT-1115-059	T. 17 S., R. 21 E., Salt Lake Sec. 3: All; Sec. 4: SESE; Sec. 5: All. Grand County, Utah	A majority of the qtr/qtrs are within preliminary priority habitat (PPH) for Sage Grouse
UT-1115-061	T. 8 S., R. 22 E., Salt Lake Sec. 6: Lots 1-5, S2NE, SENW. Uintah County, Utah	Majority of parcel is within a White-Tail Prairie Dog Colony.
UT-1115-063	T. 15 1/2 S., R. 24 E., Salt Lake Sec. 35: All. Grand County, Utah	A majority of the qtr/qtrs are within preliminary priority habitat (PPH) for Sage Grouse
UT-1115-064	T. 16 S., R. 24 E., Salt Lake Sec. 7: Lot 3, NESW. Sec 8. N2SW Grand County, Utah	Some of the qtr/qtrs are within preliminary priority habitat (PPH) for Sage Grouse. Rest of the lease removed at the Sate Directors discretion.
UT-1115-066	T. 15 1/2 S., R. 25 E., Salt Lake Sec. 31: NESE; Grand County, Utah	These Qtr/qtrs sections are within preliminary priority habitat (PPH) for Sage Grouse
UT-1115-179	T. 11 S., R. 10 E., Salt Lake Sec. 33: SWNW; Duchesne County, Utah	These Qtr/qtrs sections are within preliminary priority habitat (PPH) for Sage Grouse
UT-1115-212	T. 13 S., R. 22 E., Salt Lake Secs. 6, 7 and 8: All. Uintah County, Utah	Within the Vernal Master Leasing Plan Area.
UT-1115-213	T. 13 S., R. 22 E., Salt Lake Secs. 17 and 18: All. Uintah County, Utah	Within the Vernal Master Leasing Plan Area.
UT-1115-214	T. 14 S., R. 24 E., Salt Lake Sec. 13: SWNE. Uintah County, Utah	Within the Vernal Master Leasing Plan Area.
UT-1115-219	T. 8 S., R. 21 E., Salt Lake Sec. 6: Lots 9, 10, 16, 17, NESW. Uintah County, Utah	No leasing within the Ouray Wildlife Refuge under the Vernal RMP
UT-1115-216	T. 8 S., R. 20 E., Salt Lake Sec. 10: SESW; Sec. 15: NW, N2SW, SWSW. Uintah County, Utah	No leasing within the Ouray Wildlife Refuge under the Vernal RMP

Appendix E. Public Comments and Responses

A public comment period for the EA was held from June 12, 2015 through July 13, 2015. Five public comment letters were submitted by four special interest groups. Substantive comments have been summarized and responded to below.

Table E.1. Public Comments and Responses

Comment	Comment Summary	Response
National Outdoor Lead-ership School-01	Lease parcel UT115–040, is of particular concern for NOLS operations. NOLS uses the Green River between the Ouray National Wildlife Refuge and Sand Wash for flatwater canoeing student courses. NOLS strives to provide a wilderness experience for students. The experience of spending extended periods of time in undisturbed natural settings and places of solitude makes our programs unique and offers students opportunities for growth and learning. Our education model is fundamentally dependent on wilderness experience. Over the past decade, the wilderness experience offered by this portion of the river has been changed by encroaching energy development. We are concerned that the lease and subsequent development of UT1115–040 will have a serious impact on the river experience. Any new natural gas wells and related infrastructure on this parcel would likely be within view of the river during construction and within earshot of the river throughout the life of the wells. Such intrusions will doubtless impinge on the river traveler's experience, and degrade the outstanding remarkable values that compelled the Vernal BLM to recommend this stretch of the Green River as suitable for designation under the Wild and Scenic River Act. We request that BLM defer the lease pending further analysis of its suitability for oil and gas development. NOLS would likely consider a No Surface Occupancy stipulation for either a) the entire parcel, or b) NSO such that it excludes the possibility of visually or audibly perceiving drilling or normal well operations from the river or floodplain as sufficient measures to protect the quality of river experience. We believe the current NSO/CSU/TL stipulation for VRM Class III that is included in the draft lease sale notice would be insufficient in and of itself to protect the remaining primitive and scenic qualities of the river and the opportunity for solitude and	After review of this comment and the Vernal RMP, the following lease stipulation has been added to this parcel UT-S-119 NO SURFACE OCCUPANCY – LOWER GREEN RIVER CORRIDOR No surface occupancy within a minimum of ¼ mile from the high water mark on both banks up to ½ mile from the Ouray boundary to Carbon County line. **Exception**: Future facilities will be placed within the existing ROW corridor near the Four Mile Bottom area where an existing pipeline crosses the Green River. **Modification**: None **Waiver**: None Please note that this parcel is located within VRM III and IV, not VRM II. However, other NSO stipulations that apply to this parcel include NSO for floodplains, and NSO for 40% or greater slopes, so most of the southwest portion of this parcel is identified as NSO.

Comment	Comment Summary	Response
	quiet recreation; all of which are critical to NOLS operations on this portion of the river.	
National Outdoor Leadership School-02	Parcel 40 is not identified in the Visual Resources assessment of the Appendix C Interdisciplinary Checklist. By examination of the 2008 Vernal Field Office Approved RMP and the 2011 Visual Resource Inventory report, this parcel appears to fall within VRM Class II designation.	After GIS review of the parcel, it has been confirmed that this project falls within Class III and IV, not Class II.
National Outdoor Leadership School-03	The draft EA identifies parcel 40 with various cultural resources. Despite this identification, the necessary stipulations of UT-LN-69 and UT-LN-70 are not included in the draft lease sale notice. These stipulations should be attached.	The recommended lease notices have been added to this parcel.
National Outdoor Leadership School-04	Parcel 40 appears to be along the Lower Green River WSR, and should be managed to maintain its current "scenic" candidate status. In addition, portions of parcel 40 appear to fall near the line of sight of up to one quarter mine from the highwater mark of the Green River. Appendix C states that no WSRs are present in the project area. While at face value this is true, the above quoted sections of the RMP dictate that this segment of river be managed as such in order to maintain its current quality. As such, parcel 40 should have received a PI determination in the checklist and should have been fully evaluated in the draft EA.	The parcel is entirely outside the Green River WSR. In addition, the closest portion of the parcel to the river is 1/3 mile. The no impact determination is therefore correct. However, stipulation UT-S-119 was overlooked during the initial review of this parcel, and has been added as a result of this comment.
Southern Utah Wilderness Alliance-01	BLM's contemplated leasing decision will contribute to continued future exceedances of federal air quality standards. FLPMA prohibits BLM from authorizing activity that will exceed federal air quality stanards. Therefore the BLM cannot authorize such leasing and subsequent development.	Virtually all human activity emits ozone precursor gases, so it is neither practical nor required to require a blanket prohibition on the emissions of these gases. This is not required under FLPMA, the Clean Air Act, or any applicable state regulation. BLM reviews proposed development plans and requires controls and/or mitigation to address contributions to potential ozone exceedances, and achieves a greater level of control than required by Clean Air Act or Utah regulations. BLM also requires compliance with all applicable air quality management regulations.
Southern Utah Wilderness Alliance-02	The preparation of a Class I inventory or literature review does not satisfy BLM's obligation to make a reasonable and good faith effort to identify cultural resources at risk from this undertaking. Only a small portion of the acreage involved has been surveyed. The EA concludes that there will be no direct effects because there will not be any ground disturbance. However, SUWA maintains that even with these stipulations the sale of non-NSO leases may result in adverse effects to cultural resources, since the language of the stipulations makes it clear that subsequent undertakings may be approved even if they result in "minimized" adverse effects". Because BLM admits it may allow subsequent undertakings to proceed if adverse effects are minimized or mitigated, the agency's no adverse effects determination is baseless and BLM is required to assess and disclose adverse effects(direct,	Comment Noted. Section 106 consultation is ongoing and will be completed prior to issuance of the lease. This EA did recognize that there where possible impacts to cultural resources and analyzed those in detail.

Comment	Comment Summary	Response
	indirect and cumulative) now as well as work with SHPO, Native American tribes, and consulting parties to resolve those adverse effects.	
Southern Utah Wilderness Alliance-03	CEQ climate change guidance states "when assessing the potential significance of the climate change impacts of their proposed actions, agencies should consider both context and intensity, as they do for all other impacts. It is technically feasible to estimate GHG emissions due to scientific models and tools that area, according to CEQ "widely available" and "already in broad use". Thus the EA's inaccurate statement regarding the lack of scientific models that predict climate change is arbitrary and capricious and unsupported by the facts.	Greenhouse Gases (GHG) were estimated for the lease sale using a generic calculator to predict potential future emissions of GHG's. The GHG emissions estimates were disclosed in the EA. No further analysis is either required or possible to assign an impacts to these estimates, as there are no tools or methodology available to do so. Furthermore, GHG emission estimates presented in the lease sale are based only on generic estimates, as there are no specific development plans available to evaluate both pace of development, potential controls, or actual production estimates. The GHG emissions estimates are presented solely to place the potential emissions into a larger context, not to imply or present any specific impacts. This is consistent with current draft CEQ and BLM guidance.
Southern Utah Wilderness Alliance-04	The BLM needs to address and analyze the Social Cost of Carbon.	The estimation of social cost of carbon at the leasing stage is neither possible nor required by current CEQ or BLM guidance.
Southern Utah Wilderness Alliance-05	The EA does not comply with IM 2010–117 which requires that BLM consider alternatives in which oil and gas leasing parcels are not offered in BLM-identified wilderness characteristics. Second, there is no record evidence that BLM took into account other considerations including whether non-mineral resource values are greater than potential mineral development in undeveloped areas. Third, there is no record evidence that BLM ever evaluated whether oil and gas management decisions (whether or not to manage for protection of wilderness characteristics) made in the RMP are still appropriate to protect the resource, or if new lease stipulations need to be developed or existing stipulations updated. Finally, there is no evidence that BLM coordinated the parcel review with stakeholders affected by the leasing decision, such as the BLM White River field office in Colorado.	#1 The No Action Alternative, which would not offer pacels in wilderness characteristic areas, was considered but not selected. #2 BLM lands are managed under multiple use and analysis of potential impacts from proposed actions. No heirarchy of resources has been established so this point is moot. #3 The decision in the RMP to not manage certain lands with wilderness characteristics as wilderness is still applicable and appropriate for managing those areas under multiple use. The term "multiple use" means the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people;...the use of some land for less than all of the resources;.... This has been satisfied in the Proposed Action. #4 The appropriate potentially affected parties were notified as detailed in Table 5.1. No potential impacts were determined to affect management of shared landscapes with the BLM White River FO, therefore they were not notified or consulted.

Comment	Comment Summary	Response
Southern Utah Wilderness Alliance-06	The EA failed to take a hard look to at potential impacts to the relevant and important values of the potential Bitter Creek PR Spring and Bitter Creek ACECs. To ensure protection of the values, the EA must take a hard look at whether roads and other surface disturbing activities that occur as a result of leasing will open the area to adverse impacts.	These ACECs were not carried forward in the Vernal RMP ROD, so there is no requirement to protect those areas as designations. Impacts to the resources behind the relevant and important values were considered and carried forward when warranted in the analysis. See the ID team checklist in Appendix C for determinations of potential impacts to the following resources: forests, cultural and historic resources, watershed (soils/waters) wildlife, migratory birds, and wetlands. No surface disturbance will occur as a direct result of the leasing. However, possible development scenarios, which are only hypothetical at this stage, were analyzed and the anticipated impacts were disclosed.
Southern Utah Wilderness Alliance-07	The EA failed to discuss impacts to water quality from the leasing of these parcels. On March 27, 2015, Utah DEQ Division of Water Quality submitted a revised integrated report which included a determination of "impaired stream due to temperature and TDS" for Bitter Creek Upper, which was originally determined in 2012. Similarly Nine Mile Creek was listed as impaired in 2010. BLM cannot prohibit surface disturbing activities on the parcels and such activity will likely further impair water quality in these streams thereby inhibiting efforts to bring the upper Bitter Creek and Nine Mile Creek into compliance with relevant water quality standards.	Impacts to the water quality were considered and carried forward when warranted in the analysis. See the ID team checklist in Appendix C for determinations of potential impacts to water quality. No surface disturbance will occur as a direct result of the leasing. However, possible development scenarios, which are only hypothetical at this stage, were analyzed and the anticipated impacts were disclosed.
Southern Utah Wilderness Alliance-08	Also, BLM must protect the outstanding remarkable values identified in the Vernal RMP. Also, there is no record evidence in the EA that BLM has monitored the effectiveness of management decisions made in the RMP for rivers identified as eligible or suitable. The fact that Nine Mile and Bitter Creek were listed on Utah's 303d list in 2010 and 2012 (after the release of the Vernal RMP) shows that such management decisions were ineffective and need to be updated.	These eligible WSRs were not carried forward in the Vernal RMP ROD as suitable, so there is no requirement to protect those areas as designations. Impacts to the resources behind the outstanding remarkable values were considered and carried forward when warranted in the analysis. See the ID team checklist in Appendix C for determinations of potential impacts to the following resources: fish, wildlife, cultural, historic, and recreation. No surface disturbance will occur as a direct result of the leasing. However, possible development scenarios, which are only hypothetical at this stage, were analyzed and the anticipated impacts were disclosed.
Southern Utah Wilderness Alliance-09	Parcels 65, 66, and 210 overlap with lands that are part of the Public Lands Initiative. Leasing these parcels at this time will only serve to complicate negotiations and derail good faith efforts made by all interested parties to reach consensus on how these lands should be managed in the future.	Comment Noted. (also waiting to see if these do infact come into conflict with Uintah/Duchesne County's PLI proposal)
Wild Earth Guardians-01	It appears that Parcel 179 may also contain occupied sage grouse habitat (Vernal EA at 54) and therefore must be deferred as well.	The parcel has been edited to defer the portion that overlaps with sage grouse habitat. See deferred parcel table in Appendix D

Comment	Comment Summary	Response
Wild Earth Guardi-ans-02	The EA did not consider the potential effect of the proposed action on climate change and fails to provide quantitative or qualitative analysis to inform the public or the decision-maker.	GHG emissions estimates were disclosed in the EA. No further analysis is either required or possible to assign an impacts to these estimates, as there are no tools or methodology available to do so. Furthermore, GHG emission estimates presented in the lease sale are based only on generic estimates, as there are no specific development plans available to evaluate both pace of development, potential controls, or actual production estimates. The GHG emissions estimates are presented solely to place the potential emissions into a larger context, not to imply or present any specific impacts. This is consistent with current draft CEQ and BLM guidance.
Wild Earth Guardi-ans-03	The EA failed to estimate project emissions and fails to provide quantitative or qualitative analysis to inform the public or the decision-maker	Greenhouse Gases (GHG) were estimated for the lease sale using a generic calculator to predict potential future emissions of GHG's.
Wild Earth Guardi-ans-04	The BLM needs to address and analyze the Social Cost of Carbon.	The estimation of social cost of carbon at the leasing stage is neither possible nor required by current CEQ or BLM guidance.
Wild Earth Guardi-ans-05	The EA did not consider the possibility of earthquakes produced by underground injection of fracking waste water.	Injection of fluids associated with oil and gas production has caused induced seismic events. However, the underground injection of 'fracking waste water' in Utah presents little potential for inducing seismic activity. The majority of fracking waste 'fluids' are recycled and reused for future frack jobs. There have been no reported earthquakes in Utah that were suspected of being produced (induced) from injecting fluids in disposal wells (Class II UIC permitted by Utah Department of Oil, Gas and Mining (DOGM)), which fluid is predominantly produced water with a high salt brine content. In order to analyze the potential for eathquakes associated with oil and gas disposal wells three kinds of data will be necessary: (1) seismic data: high-quality, real-time earthquake locations, which require dense seismic instrumentation; (2) geologic data: hydrological parameters, orientation and magnitude of the stress field, and the location and orientation of known faults; and (3) industrial data: injection rates and downhole pressures sampled and reported frequently (see following link). However this data is not currently available, with the exception of industrial injection data reported to DOGM, to do the analysis. [a]

Comment	Comment Summary	Response
Wild Earth Guardi-ans-06	The EA must acknowledge BLM Utah's dismal record of failing to plug abandoned wells and must analyze impacts from the likely continuation of that practice.	BLM will continue to follow regulations regarding permitting, inspecting, and plugging wells.
Public Land Pol-icy Co-ordinat-ing Of-fice (PLP-CO)-01	Of the 163 parcels (Price and Vernal) that were nominated by industry for lease, of which 23 were immediately removed by BLM for consideration of coal and sage-grouse resources, BLM only chose to analyze 32 of the 140 remaining tracts. The reasons for this short list is due to BLM's lack of time and resources. BLM provided no explanation of the process for the selection of the specific 32 parcels analyzed. The selection process appears to have had no regard to resource potential, level of industry interest, or geographical clustering that might have expedited analysis of tracts with common geographic features. BLM is short changing industry's request for timely and orderly offering of oil and gas lease parcels by limiting the analysis to less than 25% of the requested parcels.	Vernal's decision to defer 21 parcels and portions of 2 other parcels are in accordance with Washington Office Instruction Memorandum 2010–117 Oil and Gas Leasing Reform, which specifies the following: • During Interdisciplinary Review of the Lease Sale Parcels, when environmental information is being gathered and accessed "in some circumstances it may be necessary to defer parcels from leasing while additional resource information is collected and analyzed." • During the NEPA Compliance Determination, "In cases where the field office determines that the necessary terms and conditions under which leasing would be appropriate are not in conformance with the RMP, it will be necessary to amend the RMP before leasing is appropriate. If it is necessary to amend the RMP, the leasing EA (or EIS) must either me et the standards for NEPA documentation to support a plan amendment (see 43 CFR part 1600), or the affected lease parcels must be withdrawn or deferred from leasing until a plan amendment or revision can be completed at a later date."

[a]https://profile.usgs.gov/myscience/upload_folder/ci2015Jun1012005755600Induced_EQs_Review.pdf

Appendix F. Parcel Pictures

Figure F.1. Lease Parcel UT-1115-040

Figure F.2. Lease Parcel UT-1115-058

Figure F.3. Lease Parcel UT-1115-062

Figure F.4. Lease Parcel UT-1115-062

Figure F.5. Lease Parcel UT-1115-065

Figure F.6. Lease Parcel UT-1115-065

Figure F.7. Lease Parcel UT-1115-066

Figure F.8. Lease Parcel UT-1115-178

Figure F.9. Lease Parcel UT-1115-179

Figure F.10. Lease Parcel UT-1115-179

Figure F.11. Lease Parcel UT-1115–179

Figure F.12. Lease Parcel UT-1115-179

Figure F.13. Lease Parcel UT-1115-179

Figure F.14. Lease Parcel UT-1115-210

Figure F.15. Lease Parcel UT-1115-220

Figure F.16. Lease Parcel UT-1115-222